NATIONALGEOGRAPHIC.COM/MAGAZINE AUGUST 2004

NATIONAL GEOGRAPHIC

YEMG
WWW.YDY.COM

THE HEAVY COST OF fat

The Real Man From Snowy River 2
Squid: Masters of Disguise 30
Trekking Across Patagonia's Ice 62
Wild on the Jersey Shore 80
Land of the Surfing Hippos 100
ZipUSA: Almost Canada 128

GEOGRAPHICA SPECIAL
Greece and the Olympics, Past and Present

OnScreen & Online

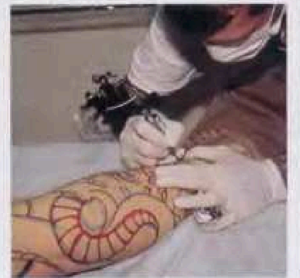
National Geographic Channel

TUESDAYS, 9 P.M. ET/PT

Interpol Investigates

Terrorists, kidnappers, and smugglers meet their match when agents of Interpol, the world's largest international police organization, join the chase. Each episode of this true-crime series focuses on the hunt across borders to catch fugitives, like convicted tourist killer Charles Sobhraj (left), hiding his face after a court date in Nepal.

WEDNESDAYS, 9 P.M. ET/PT



Taboo Step outside what many consider to be the boundaries of acceptable behavior and belief to glimpse worlds where the strange is normal. In *Taboo*'s third season, witness pilgrims in India worshipping at a temple swarming with rats (in the *Extreme Living* episode) and discover some of the reasons why people subject themselves to tattoos (right), piercings, and scarification (in *Body Cutters*).

NATIONAL GEOGRAPHIC CHANNEL

VISIT *NATIONALGEOGRAPHIC.COM/CHANNEL* TO FIND OUT WHAT'S ON—AND HOW TO GET THE CHANNEL IN YOUR AREA

MONDAY, AUGUST 9
9 P.M. ET/PT

Most Amazing Moments

Count down the most thrilling moments National Geographic has captured on film in the five action-packed segments of this two-hour special.

Channel and NGT&F programming information accurate at press time; consult local listings or the Society's website at nationalgeographic.com

NG Television & Film

NATIONAL GEOGRAPHIC ULTIMATE EXPLORER, MSNBC, SUNDAY, AUGUST 1
8 P.M. ET/PT

Deadly Love The danger of bullfighting and the passion of flamenco have nothing on the courtship of spiders. Journeying across Spain to study the love lives of arachnids, from jumping spiders (above) to tarantulas, correspondent Nick Baker and biologist Ana Rivero bring you an intimate look at spider mating behavior in which one false move can mean death.

FORCES OF NATURE
AT GIANT-SCREEN THEATERS ACROSS THE U.S.

National Geographic Ultimate Explorer MSNBC
Sundays, 8 p.m. ET/PT

National Geographic Specials PBS
See local listings

National Geographic Videos, Kids Videos, and DVDs
Call 1-800-627-5162

nationalgeographic.com

TURN DOWN THE POWER ON YOUR UTILITY BILLS

STEP INTO OUR VIRTUAL HOUSE FOR REAL SAVINGS Enter National Geographic's interactive "green" house to find budget-friendly household tips. See the big difference small choices can make in your energy bill—and in the planet's power supply. ***nationalgeographic.com/everyday***

SPECIAL COLLECTOR'S EDITIONS WEBSITES

TAKE A VIDEO TOUR of our photo archives and find other online exclusives from *100 Best Vintage Photographs, Exploring Space, Treasures of Egypt*, and more. ■ INTERACTIVE MEDIA Test your space smarts and use a hieroglyph translator. ***nationalgeographic.com/magazine/0408***

CUSTOMER SERVICE
Handle your account online: renew, update, order gift subscriptions at ***nationalgeographic.com/magazine***

Latest Discoveries
nationalgeographic.com/news

Shop Our Store
nationalgeographic.com/store

Get Free E-mail Newsletters
nationalgeographic.com/register.html

FROM TOP: BINOD JOSHI, AP PHOTO; BETO MELLO, NGT&F; JOE McDONALD, CORBIS; NATIONAL GEOGRAPHIC PHOTOGRAPHER MARK THIESSEN

Behind the Scenes

PHOTOGRAPHY

Flower Power

The best photographs are usually the product of sweat, experience, and a dose of luck. To shoot the last remaining population of a Brazilian amaryllis for our story "The Rain Forest in Rio's Backyard" (March 2004), zoologist-photographer Mark Moffett and Brazilian botanist Gustavo Martinelli helicoptered into the mountains outside Rio de Janeiro. But when the weather turned and clouds rolled in, the helicopter was unable to return to pick them up, forcing the duo to spend half a day scooting down the mountain until they could be rescued. For Mark the bad weather turned out to be a blessing. "The storm in the background gave the picture, as we say technically, its oomph."

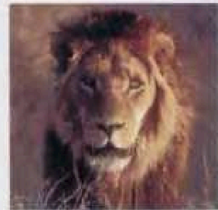
That oomph helped Mark win two first-place awards, for science and natural history, at the Missouri School of Journalism's Pictures of the Year competition. He received top honors for his amaryllis picture (left) and a portfolio of images of rare, seldom photographed plants and animals in Brazil's Atlantic forest, an area besieged by urban sprawl.

To document such hard-to-find species, Mark relied on a loosely organized team of scientists armed with cell phones and positioned along the Brazilian coastline. "Whenever they'd find one of the rare species, we'd zip to the site, photograph it, then zip back to resume what we were doing," says Mark.

NATIONAL GEOGRAPHIC staff photographer Jodi Cobb also received a first-place award for general reporting for her portrayal of modern slavery published in our September 2003 issue.

NATIONAL GEOGRAPHIC TELEVISION & FILM

Living With Lions



To create National Geographic's new giant-screen film, *Roar: Lions of the Kalahari,* filmmaker Tim Liversedge had to set his subjects at ease. For 18 months Liversedge, a Botswana citizen, and cameraman Richard Jones lived in the Kalahari Desert among a pride of lions and the elephants and springbok that share a water hole. Noisy film equipment and humans tend to scare away wildlife, but after months of living in close company with the visitors, the animals grew accustomed to them. The lions eventually became so comfortable that they occasionally crouched near Tim and his camera, using him for cover while stalking their prey. Tim's steady nerve was rewarded with dramatic close-up action never before captured on large-format film. To find out when and where to see *Roar,* go to *destinationcinema.com/our_films/roar/roar.asp.*

COASTAL GABON (PAGE 100)

Get More

To learn more about a subject covered in this issue, try these National Geographic Society products and services. Call 1-888-225-5647 or go to *nationalgeographic.com* for more information. ■ **Africa's Wild Eden** on *National Geographic Ultimate Explorer,* Sunday, July 25, 8 p.m. ET/PT on MSNBC. Explore Gabon's Loango National Park with Mike Fay and Nick Nichols, who brought his family to live on the park's isolated shores. ■ **Africa Extreme** on the National Geographic Channel, August 16, 8 p.m. ET/PT. Relive Mike Fay's Megatransect—the epic walk from Congo's flatlands to Gabon's coast. ■ ***Africa*** book. Learn about contemporary Africa. Includes a chapter on the rain forests of the Congo basin ($34.95).

Calendar

August

12 Flashback exhibit opens. See vintage NGS photos (through October 11). National Geographic Museum, Washington, D.C.

September

23 Carol Beckwith and Angela Fisher lecture on *Faces of Africa* at the Field Museum, Chicago.

October

Traveler On Campus, a publication of *Traveler* magazine, inserted in college newspapers nationwide.

22-24 All Roads Film Festival, Los Angeles. Indigenous filmmakers tell their stories.

28-30 All Roads Film Festival, Washington, D.C.

Calendar dates accurate at press time; see *nationalgeographic.com* for more information

Ask Us

How can I find old issues of NATIONAL GEOGRAPHIC?

You can order copies of most back issues from our single-copies sales division (1-800-777-2800 or ngs.single@customersvc.com). Use the searchable NGM index at *nationalgeographic.com/publications* to find the desired issue. In addition, excerpts of articles published since September 2000 can be read online at *nationalgeographic.com/magazine.*

Have a question about Society membership? Reach us online at ngmservice.com, or phone us at 1-800-NGS-LINE (647-5463). Outside the U.S. call 1-813-979-6845. Our mailing address is National Geographic, PO Box 63001, Tampa, FL 33663-3001.

MARK W. MOFFETT (TOP); JUNE LIVERSEDGE

Visions of Earth

ZAMBEZI PLAIN, ZAMBIA

I didn't come to Liuwa Plain National Park in Zambia to photograph wildebeests. But on this dusty June evening, I couldn't resist the sight of their stutter-stepping, head-shaking runs. I had made the long journey across the flood-prone Zambezi plain to record one of the wildest, most remote places in Africa—few people and no roads or tourist facilities, at least not yet. The tourists will probably come, and that's not necessarily a bad thing. But to me Liuwa will always be Africa primordial. —*Chris Johns*

▶ Download this image as desktop wallpaper at **nationalgeographic.com/magazine/0408.**

From the Editor

"Waltzing Matilda," "The Man From Snowy River," kangaroos, the outback, the bush—they're all Australian to the core, right? Our mental picture of rural Australia, like our notion of America's Wild West, is part reality, part myth. But there's something special about the world's image of Australia: It's largely the product of one man, poet A. B. "Banjo" Paterson (1864-1941).

NEWSPIX

To Aussies—even those who've never ventured from coastal cities into the heart of the continent—Banjo Paterson's poetry doesn't just celebrate the Australian bush, it *defines* it. Few outside Australia may recognize his name, but down under it's hard to escape Banjo.

Shearers quote his poetry while clipping wool from sheep. Schoolchildren recite his best known poems. Real-life drovers compete to gain the honor of being known for a year as the Modern Man From Snowy River, after one of Banjo's fictional characters. His most famous song, "Waltzing Matilda," had a shot at becoming the national anthem of Australia. His face even graces the ten-dollar bill.

I feel a kinship with Banjo's mythical Australia, having grown up in a somewhat mythical state—Texas. From my first trip to Australia, I felt instantly at home. This was my kind of place. It wasn't just that it reminded me of Texas' grit and wide-open spaces. There's something about living here in fast-paced, high-pressure Washington, D.C., that unites me with many Australians: We yearn for something simpler, something wilder (even if it's something not quite real). So turn to page 2, and join me for a little escape—a search for Banjo's legacy in the soul of Australia.

Bill Allen

WILLIAM L. ALLEN
Editor in Chief

CHRIS JOHNS, BERNARD OHANIAN
Associate Editors
ROBERT L. BOOTH, *Managing Editor*

SENIOR EDITORS
DON BELT, *Geography & World Affairs*
DENNIS R. DIMICK, *Environment & Technology*
WILLIAM T. DOUTHITT, *Story Development*
JOHN A. ECHAVE, *Research Grant Projects*
KENT J. KOBERSTEEN, *Photography*
LISA MOORE LAROE, *Staff Writers*
VALERIE A. MAY, *New Media*
PETER MILLER, *Expeditions*
OLIVER PAYNE, *Manuscripts*
CONSTANCE H. PHELPS, *Art Director*
LESLEY B. ROGERS, *Research*
CHRISTOPHER P. SLOAN, *Art*

EDITORIAL
Assistant Editors: Joel K. Bourne, Jr., K. M. Kostyal, Peter L. Porteous, Jane Vessels. **Articles Editors:** Lynn Addison, Glenn Oeland, Barbara Paulsen, Jennifer Reek. **Senior Writers:** John L. Eliot, Alan Mairson, Cathy Newman, Tom O'Neill, Cliff Tarpy, A. R. Williams, Margaret G. Zackowitz. **Writers:** Chris Carroll, Jennifer Steinberg Holland, Carol Kaufmann, Michael Klesius, Karen E. Lange, Lynne Warren. **Research:** David Brindley, *Assoc. Director;* Abigail A. Tipton, *Asst. Director; Research Editors:* Victoria C. Ducheneaux, Alice J. Dunn, Patricia B. Kellogg, Kathy B. Maher, Barbara W. McConnell, Mary McPeak, Jeanne E. Peters, Heidi Schultz, David W. Wooddell. *Senior Researchers:* Nora Gallagher, Mary Jennings, Marisa J. Larson, Cathleen S. Lineberry, Christy Ullrich. *Researchers:* Karen Font, Emily Krieger, Nancie Majkowski, Elizabeth Snodgrass. **New Media:** Cassandra Franklin-Barbajosa, *Senior Writer;* Amanda MacEvitt, *Producer*

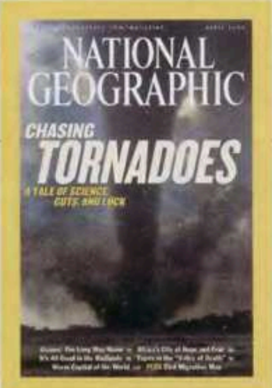
ILLUSTRATIONS
Photography: Susan A. Smith, *Asst. Director; Photographers:* William Albert Allard, Jodi Cobb, Michael Nichols, Mark Thiessen. *Photo Engineering:* Lawrence B. Maurer. **Editors:** Bert L. Fox, Todd James, Elizabeth Krist, Kathy Moran, Kurt F. Mutchler, Christopher Scaptura, Susan Welchman. **Design:** Robert Gray, David C. Whitmore, *Asst. Directors;* Elaine H. Bradley. *Designers:* Betty Clayman-DeAtley, Janel Kiley, Beth Laundon. **Art:** Jeffrey L. Osborn, *Assoc. Director;* Christopher A. Klein, *Asst. Director;* Kris Hannah; Ellie Boettinger, Ann R. Perry, *Research*

EDITORIAL SERVICES
Administration: Marisa Domeyko, *Staff;* Carol L. Dumont, *Scheduling;* Maria-Teresa Lawrence, *Business Manager;* Brian E. Strauss, *Electronic Publishing;* Kristin A. Weichman, *Asst. to the Editor in Chief;* Sandra M. Dane, Luz Garcia, Artemis S. Lampathakis. **Communications:** Mary Jeanne Jacobsen, *Vice President;* Laura Moreland, Barbara S. Moffet. **Correspondence:** Joseph M. Blanton, Jr., *Director;* Carol Stroud, Lisa Walker. **Image Collection:** Maura A. Mulvihill, *Vice President;* William D. Perry, *Sales;* Carolyn J. Harrison, John A. Rutter. **Libraries and Information Services:** Susan Fifer Canby, *Vice President;* Renee Braden, Ellen D. Briscoe, Janet Dombrowski, Barbara P. Ferry, Anne Marie Houppert, Ann E. Hubbs, Karen Huffman. **Maps:** Allen Carroll, *Chief Cartographer.* **Translations:** Kathryn A. Bazo, *Director;* Sigrid Block. **Travel:** Cristine E. Ghillani

PRODUCTION SERVICES
Hans H. Wegner, *Vice President.* **Digital Imaging:** Thomas J. Craig, *Director;* Martin G. Anderson, Clayton R. Burneston, Phillip E. Plude, Bernard G. Quarrick. **Distribution:** Michael Swarr. **Engraving:** George Bounelis, *Director;* Judy L. Garvey, William D. Reicherts. **Printing:** Joseph M. Anderson, Edward J. Holland. **Quality:** Ronald E. Williamson

MAGAZINE PUBLISHING
Advertising: Stephen P. Giannetti, *Vice President and Group Publisher.* Sean P. Flanagan, *Vice President and Worldwide Publisher;* Claudia Malley, *Associate Publisher. International:* Michel Siegfried. *Directors:* John G. Huber, *Integrated Marketing;* Ron Bottorff, *Western Sales;* Gail M. Jackson, *Production;* Margaret Robertson, *Business and Operations;* Suzanne Samour, *Marketing. Regional Managers:* Bob Amberg, *Southeast;* John Iavarone, *Detroit;* John Patten, *Eastern;* Philip G. Reynolds, *Midwest.* **Circulation:** Kitty Carroll Colbert, *Vice President. Directors:* Elizabeth M. Safford, *North America;* John A. Seeley, *International.* **Member Services:** Christina C. Alberghini, *Director*

Forum



April 2004

Priit J. Vesilind and Carsten Peter's cover story on "Chasing Tornadoes" generated plenty of mail. That's not much of a surprise: Over the years stories about natural disasters have ranked high with NATIONAL GEOGRAPHIC readers. Our story about the eruption of Mount St. Helens in the January 1981 issue remains the single most popular article since we began surveying readers in 1977.

Chasing Tornadoes

So if you are a tornado chaser, you get to mesh scientific exploration with the art of photography while driving really fast with the adrenaline surging as you try to survive one of Earth's most powerful destructive forces? I think I know what I want to be when I grow up.

DAVID H. PANASCI
Jamesville, New York

I grew up in Tornado Alley and well remember the very early days of severe-storm forecasting. I also remember the terror of awakening in the middle of the night to the roar of a nearby tornado or those really loud and scary warning sirens. I hate to think of vital research possibly being curtailed because there are too many thrill seekers clogging the roads for scientists to be able to safely conduct important research. For those of you who think tornadoes are such a lot of fun, I suggest you go live in a mobile home in Oklahoma City. Find shelter with your kids screaming in terror as a half-mile-wide F4 roars down your street. That should provide sufficient thrill. Don't take my words too personally—I feel the same way about the idiots in this part of the country who head for the beach to go surfing whenever hurricane warnings are up.

KATE PAYNE
Houston, Texas
FROM OUR ONLINE FORUM
nationalgeographic.com/magazine/0404

Over the course of my many years living in southern California, I have frequently been asked why I would want to live in earthquake country. After viewing the pictures in the tornadoes article and seeing the total destruction of Manchester, South Dakota, I think I might ask the same question of those who live in Tornado Alley. Give me an earthquake any day of the week over that terror.

PAUL MYERS
Claremont, California

Several years ago en route from Atlanta to Austin, my husband

FOR MORE INFORMATION

To get NATIONAL GEOGRAPHIC please call **1-800-NGS-LINE (1-800-647-5463).** Hearing-impaired TDD users may call **1-800-548-9797.**

The magazine's website: **nationalgeographic.com/magazine**

For an online index of all National Geographic publications, go to: **nationalgeographic.com/publications**

NATIONAL GEOGRAPHIC SOCIETY

"For the increase and diffusion of geographic knowledge."

The National Geographic Society is chartered in Washington, D.C., as a nonprofit scientific and educational organization. Since 1888 the Society has supported more than 7,500 explorations and research projects, adding to knowledge of earth, sea, and sky.

JOHN M. FAHEY, JR., *President and CEO*

Executive Vice Presidents
TERRENCE B. ADAMSON
LINDA BERKELEY, *President, Enterprises*
TERRY D. GARCIA, *Mission Programs*
JOHN Q. GRIFFIN, *President, Magazine Group*
NINA D. HOFFMAN, *President, Books and School Publishing Group*
CHRISTOPHER A. LIEDEL, *CFO*

BOARD OF TRUSTEES
GILBERT M. GROSVENOR, *Chairman*
REG MURPHY, *Vice Chairman*

JOAN ABRAHAMSON, WILLIAM L. ALLEN, MICHAEL R. BONSIGNORE, MARTHA E. CHURCH, MICHAEL COLLINS, ROGER A. ENRICO, JOHN M. FAHEY, JR., DANIEL S. GOLDIN, JOHN JAY ISELIN, JAMES C. KAUTZ, J. WILLARD MARRIOTT, JR., FLORETTA DUKES McKENZIE, GEORGE MUÑOZ, PATRICK F. NOONAN, NATHANIEL P. REED, WILLIAM K. REILLY, ROZANNE L. RIDGWAY, JAMES R. SASSER, B. FRANCIS SAUL II, GERD SCHULTE-HILLEN

TRUSTEES EMERITUS
Joe L. Allbritton, Thomas E. Bolger, Frank Borman, Lewis M. Branscomb, Robert L. Breeden, Lloyd H. Elliott, George M. Elsey, William Graves, Mrs. Lyndon B. Johnson, Laurance S. Rockefeller, Robert C. Seamans, Jr., Frederick G. Vosburgh

COUNCIL OF ADVISORS
Roger A. Enrico, *Chairman;* Michael R. Bonsignore, Howard G. Buffett, Craig D. Campbell, Juliet C. Folger, Robert B. Haas, Robert A. Hefner III, Bruce L. Ludwig, Sally Engelhard Pingree, W. Russell Ramsey, Catherine B. Reynolds, Edward P. Roski, Jr., B. Francis Saul II, Garry A. Weber

RESEARCH AND EXPLORATION COMMITTEE
Peter H. Raven, *Chairman;* John M. Francis, *Vice Chairman;* William L. Allen, Martha E. Church, Steven M. Colman, Scott V. Edwards, William L. Graf, Nancy Knowlton, Dan M. Martin, Scott E. Miller, Jan Nijman, Stuart L. Pimm, Elsa M. Redmond, Bruce D. Smith, Hans-Dieter Sues, Patricia C. Wright, Melinda A. Zeder

EXPLORERS-IN-RESIDENCE
Robert Ballard, Wade Davis, Sylvia Earle, Zahi Hawass, Louise Leakey, Meave Leakey, Johan Reinhard, Paul Sereno
Conservation Fellow: J. Michael Fay

CONTRIBUTING PHOTOGRAPHERS-IN-RESIDENCE
Sam Abell, Annie Griffiths Belt, David Doubilet, Karen Kasmauski, Emory Kristof, Frans Lanting

MISSION PROGRAMS
Vice Presidents: Barbara A. Chow, *Education Foundation;* John M. Francis, *Research, Conservation, and Exploration;* Jacqueline M. Hollister, *Development;* Sarah Laskin, *Public Programs.* **Exhibits:** Susan S. Norton. **Expeditions Council:** Rebecca Martin. **Geography Bee:** Mary Lee Elden. **Lectures:** P. Andrew van Duym, Gregory A. McGruder

School Publishing: Ericka Markman, *Sr. Vice President.* **International:** Robert W. Hernández, *Sr. Vice President.* **Human Resources:** Thomas A. Sabló, *Sr. Vice President.* **Communications:** Betty Hudson, *Sr. Vice President.* **Treasurer:** H. Gregory Platts, *Sr. Vice President*

NATIONAL GEOGRAPHIC VENTURES
DENNIS R. PATRICK, *President and CEO*

Television: Timothy T. Kelly, *President.*
National Geographic Channel: David Haslingden, *President, International;* Laureen Ong, *President, U.S.*
nationalgeographic.com: Chris McAndrews, *Senior Vice President and General Manager*

Contributions to the National Geographic Society are tax deductible under Section 501(c)(3) of the U.S. tax code.

Copyright © 2004 National Geographic Society. All rights reserved. National Geographic and Yellow Border: Registered Trademarks ® Marcas Registradas. National Geographic assumes no responsibility for unsolicited materials. Printed in U.S.A.

Johannesburg

Here we go again. We left apartheid behind a decade ago. As a white South African, I am pleased about the freedom in my country and have been able to walk proud. Why is it then that in every article about South Africa the horrid past has to be rehashed? Every article about the U.S. doesn't talk about your Civil War or slavery.

ANRICA MILLS
Centurion, South Africa

When I was ten, our family left Johannesburg and moved to Los Angeles. Our parents knew, even then, that there was no future in South Africa for their children. Your article made me glad once again that we made that move.

LISETTE SAGE
Beaverton, Oregon

I read your Johannesburg article with a growing sense of dismay. The photographs were patronizing, and the article was distorted. I could not recognize the city Peter Godwin described. It was not the city my family lives in. We, like others, have deliberately chosen an ethos of racial harmony and tolerance, and we have instilled these values in our children. They attended interracial educational institutes. Now young adults, they have continued to play together in trendy clubs and bars in downtown Johannesburg and Melville and to learn together in colleges across South Africa.

LILIAN KRAWITZ
Johannesburg, South Africa

I enjoyed your article on Johannesburg. Born and raised in Africa, I have seen the overwhelming population of needy and desperate people. Johannesburg has the potential to liberate Africa, but the crime and chaos make it difficult for

TOMASZ TOMASZEWSKI

the city to reach its potential. This article makes people see the many reasons for Africa's underdevelopment, but it also opens our minds to Africa's promising future.

NIKHIL BHAGWAN
Surrey, British Columbia

and I flew over and through a supercell. We learned the next day that it had spawned several twisters killing many people. I started wondering if there has ever been any research to figure out a way to take some of the wind out of the sails of these storms, so to speak. Is it not conceivable that a well-aimed detonation of some weapon into the center of these fearsome vortices might somehow be able to blow them apart?

MARGARET KNAPP TALEVI
Hopewell Junction, New York

WRITE TO FORUM National Geographic Magazine, PO Box 98199, Washington, DC 20090-8199, or by fax to **202-828-5460**, or via the Internet to **ngsforum@nationalgeographic.com**. Include name, address, and daytime telephone. Letters may be edited for clarity and length.

No one knows how tornadoes would be affected by such an explosion. Tornadoes have 50 to 100 times more energy than any conventional weapon, says engineer Tim Samaras, so an explosion might not disrupt the tornado enough to cause any major change. It's possible that a detonation could have the opposite effect, intensifying the tornado, says Harold Brooks of the National Severe Storms Laboratory. "And," says Samaras, "what if you miss?"

Cranes

In the spring of 1995, in central Texas, I noticed a line of birds on the southern horizon. The birds passed almost directly overhead and caught a rising thermal, breaking formation to form an upward swirling mass, flashing alternately light and dark in the sunlight as they gained elevation. It was the northward migration of the sandhill crane. At their peak, the birds stretched from horizon to horizon, with the shimmering column at its center. I consider myself very fortunate indeed to have witnessed such a display.

RUSSELL HIGGINBOTHAM
Driftwood, Texas

Bird Migration Map

I was glad to see the bird migration map. I suppose space is at a premium, but I noticed that several important species were not included, such as the Canada goose and the belted kingfisher.

LIAM F. READY
Hamilton, Ontario

You're not alone. Others wrote in about their favorite missing birds. Unfortunately, only 50 birds could

be selected for each side of the map. We highlighted species that represent a wide range of migration routes, geographic areas, and bird categories.

Badlands National Park

Your article on the Badlands was beautiful and will probably encourage many to visit. However, the article failed to mention that visitors may find their activities limited in the South Unit of the park. My understanding is that the Sioux protesters who halted the Park Service's fossil excavations have taken over the portion of the park on Pine Ridge Reservation land and warned all "trespassers" to stay away. Although the threat of violence may be overblown, potential visitors should be informed of this situation, rather than be disappointed—or worse—in their attempt to visit.

ROBIN FENNEMA
Tallahassee, Florida

The National Park Service says that conflict in the South Unit has calmed. Visit nps.gov/badl *for updates on the situation.*

Park ranger Scott López implies that geocachers go into areas like the Badlands to poach fossils. That is not part of geocaching. Geocachers are environmentalists at heart. We believe in leaving as little trace as possible.

GREG SMITH
Baltimore, Maryland

Who Knew?

Your lighthearted illustration of the Earth has the unfortunate side effect of reinforcing a misguided "north is up" perspective, which is, of course, an entirely artificial construct. As a transplant from the Southern Hemisphere who discourages being identified as coming from down under, I would have preferred to see a pile of dirt that had fallen north from the "lower" part of the planet. Why not discombobulate a few northerners by publishing a view of the planet oriented so that Antarctica is at the top?

CHRIS HANSEN
Shorewood, Wisconsin

Those who think tornadoes are such fun: Try living in a mobile home in Oklahoma City. Find shelter with your kids screaming in terror as a half-mile-wide F4 roars down your street. That should provide enough thrill.

Tigers in Myanmar's "Valley of Death"

As a grade school teacher, I am always interested in exceptional people whom I can present as heroes to the children I teach. After reading this masterful tale of saving the last tigers in Myanmar, I want the children to know about my latest hero—Alan Rabinowitz. In over ten years as an avid subscriber and reader of NATIONAL GEOGRAPHIC, I have never read a better account of the complex challenge of wildlife conservation in an area of poverty, political instability, and rapid change. The accompanying photographs by Steve Winter are magnificent and truly bring home the issue. Mr. Rabinowitz, you deserve our highest praise and deepest admiration for your ongoing efforts to save the big cats. Thank you for doing what you do. You are a true hero.

JOHN T. KNOX
Chula Vista, California

While it is commendable that the Burmese are creating a sanctuary for tigers, it is indeed unfortunate that the government will be treating its tigers far better than its own people.

SCOTT FAIRTY
Lapeer, Michigan
FROM OUR ONLINE FORUM
nationalgeographic.com/magazine/0404

Flashback

I could have done without the gory lynched tiger photo in Flashback, especially after reading the article about Myanmar's "Valley of Death" and the struggle for conservation and protection regarding tigers. If your intention was to depress your readers, you succeeded.

SUSAN ARMSTEAD
Roseville, California

Geographica: Worldwide, It's a Hit

Your article about baseball's "worldwide" popularity is typical of the American press, which exaggerates anything that has to do with football, basketball, or baseball. Soccer is the only sport that can call itself worldwide.

WILLIE WILLEN
Atlanta, Georgia

We occasionally make our customer list available to carefully screened companies whose products or services may be of interest to you. If you prefer not to receive such mailings, U.S. and Canadian customers please call 1-800-NGS-LINE (1-800-647-5463). International customers please call +1-813-979-6845 or write: National Geographic Society, PO Box 63005, Tampa, FL 33663-3005. Please include the address label from your magazine wrapper when writing.

GEOGR

THE PEOPLE, PLACES, AND

ANCIENT GREECE

They Might Not Be Giants

Reading the bones of a mythic race

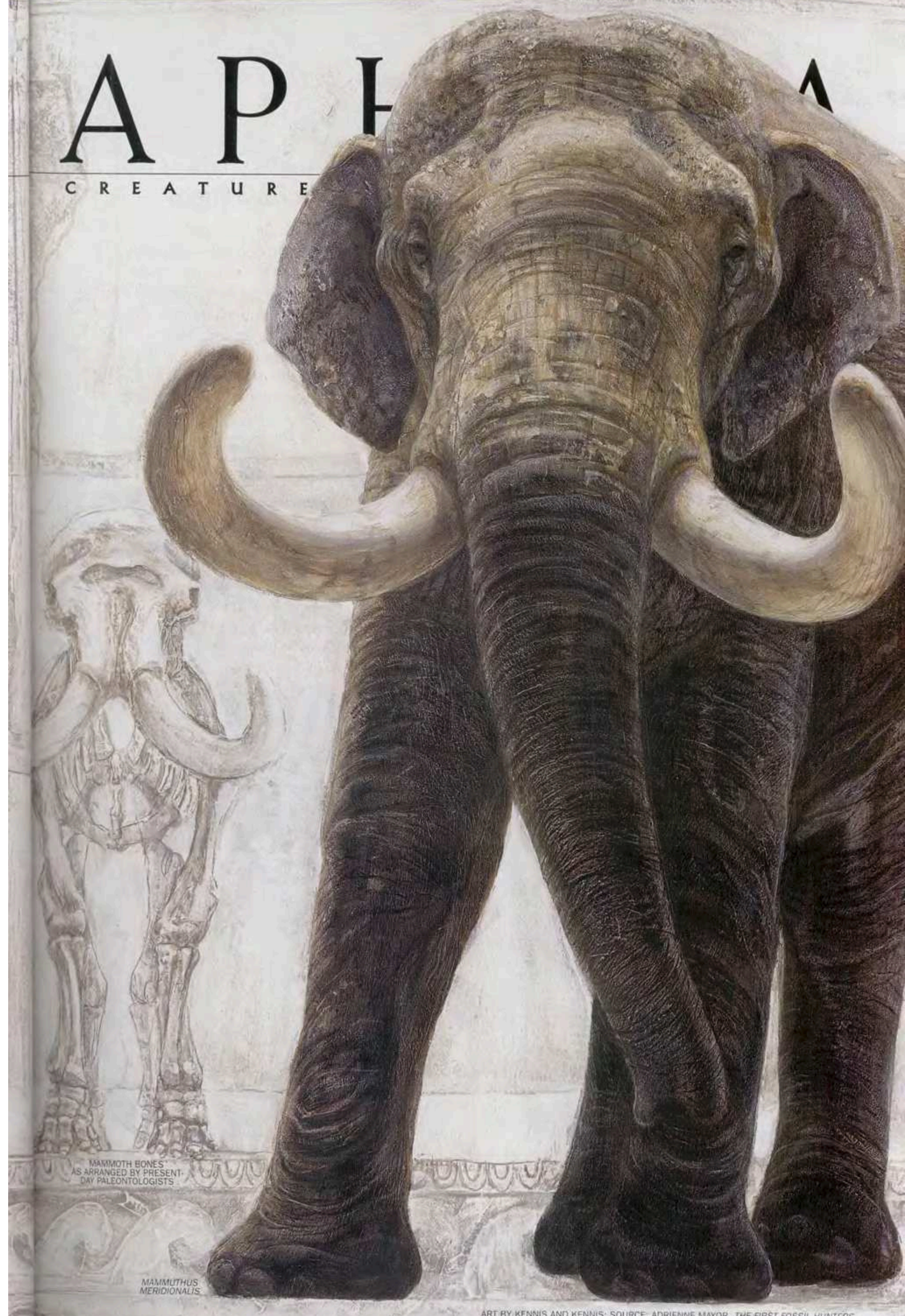
Ancient Greeks believed in giants—mythic heroes and semihuman creatures many times bigger than ordinary folk. Atlas, the Cyclops, and the Titans were among them, but possibly the greatest of them all was Pelops. Poets envisioned him as a handsome interloper from the east, with a shoulder blade made of ivory. After winning a rigged chariot race, Pelops was said to have founded the Olympic games as a way to honor the gods for his victory. He also reigned over Greece's southern peninsula—the Peloponnese, whose name means "Pelops's island." At the peninsula's northwest corner stood Olympia, a religious complex that was the site of the Olympic games and of a shrine that claimed a relic of the mighty giant himself—his massive, ivory-white shoulder blade. During the Trojan War, the relic was reportedly shipped to the walls of Troy, as a talisman to bring the Greeks victory.

Greek writers, from the fifth-century B.C. historian Herodotus to the second-century A.D. travel writer Pausanias, chronicled sightings of other bizarre remains of giants. Immense, disarticulated skeletons appeared along unstable shorelines, and huge, jumbled bones poked from weathered hills and cliffs.

Today most scholars shelve stories of giant bones under fiction. But Adrienne Mayor, a folklorist and historian of early science, takes the Greeks at their word. "Since the 19th century," Mayor says, "modern paleontologists have discovered rich bone beds of giant, extinct mammals in the same places the ancient Greeks reported finding the bones of heroes and giants." She thinks what the Greeks actually found were isolated fossil bones of creatures like the southern mammoth (facing page and skeleton at middle right), a relative of the woolly mammoth. With no other way to explain the bones, the Greeks may have conceived them to be skeletal remains of giants (skeleton at near right).

5-FOOT-3-INCH MAN

MAMMOTH BONES RECONFIGURED IN HUMAN SHAPE



ART BY KENNIS AND KENNIS; SOURCE: ADRIENNE MAYOR, *THE FIRST FOSSIL HUNTERS*

Such mammoth bones would have dwarfed any living creature native to the lands of the ancient Greeks. The fossil beds that studded the Greek and larger Mediterranean world (map above) included those of mammoths, elephants, and other animals that had lived tens of thousands of years before the Greeks. More fragile bones, such as skulls, often didn't survive. But denser remains—shoulder blades and thighbones, which bear a resemblance to human bones—did.

"They also found fossil ivory tusks from extinct mammoths in the ground," Mayor says, "and they assumed the ivory was produced by the earth, like gems and minerals. In fact, the ancient Greek word for ivory, *elephas*, was the name they gave to elephants once they did encounter them." That first encounter probably didn't happen until the fourth century B.C., when Alexander the Great and his army advanced on Babylon and were met by a phalanx of Persian war elephants.

By that time, though, the myths of superhumans and giants were well established in the Greek mind. Could some of these characters have been inspired by finds of enormous fossil bones that couldn't otherwise be explained? Or did the myths come first—and when confronted with the bones, did the Greeks imagine them reassembled as the villains and heroes of the larger-than-life mythic world?

—Joshua Korenblat

WEBSITE EXCLUSIVE Find links and resources selected by our Research Division at **nationalgeographic.com/magazine/resources/0408.**

Fantastic Creatures and Their Fossil Origins

Griffins Lion-size, winged creatures with beaked heads, they were first conceived by desert nomads in Central Asia, who may have gotten the idea from fossils of ceratopsian dinosaurs.

Dragonets Nasty little flying menaces that originated in Switzerland during the Middle Ages, they may have been inspired by fossil finds of pterodactyls, flying reptiles of the late Jurassic and the Cretaceous.

Thunder beasts Large, mythic creatures believed by the Sioux to have been killed by lightning bolts, they may have been based on dinosaur remains in the Dakota Badlands.

Humanlike giants The Aztec thought the fossilized bones of mastodons and mammoths were the remains of giants vanquished by Aztec ancestors.

WHAT IS IT?

A strigil, ancient Greek cleaning tool

What was it for? The bronze device was used by male athletes to scrape dirt and oils off their bodies after competitions and training.

Why apply oil? Olive oil protected skin from injuries, reduced sweating, and made wrestlers slippery opponents. In time, athletes may have oiled themselves to make their bodies more aesthetically pleasing during events.

Was it just for cleaning? First appearing in Greek art in the sixth century B.C., the strigil evolved into a symbol of the athletic spirit. Athletes using them were depicted on pottery and in sculptures and paintings. Some competitors may have given strigils as offerings to the gods after victory, and others took their strigils to their graves—the devices have been found in ancient tombs.

What replaced the strigil? Soap (and clothes). When the Olympics resumed in 1896—almost 15 centuries after Roman emperor Theodosius I banned all "pagan" events, including sports—dirty athletes no longer had to scrape; they washed. *—Whitney Dangerfield*

THE ARTHUR M. SACKLER MUSEUM, HARVARD UNIVERSITY ART MUSEUMS

OLYMPIC HISTORY

Been There, Played That

Greek origins of today's Olympic sports

Some of this summer's Olympic events would be familiar to the athletes who originated the competitions around the eighth century B.C. Artwork on classical pottery shows well-muscled men racing, wrestling, throwing the discus, and more. But the clothing sported by today's competitors would probably puzzle those ancient Greeks, since the original Olympic athletes wore little more than the sheen of olive oil.

—*Margaret G. Zackowitz*

Sport		How They Played It
Discus		Modern discus throwers use much the same technique as ancient Greeks. What has changed over the centuries is the discus itself: The earliest surviving models, from the sixth century B.C., were stone. Later ones were iron or bronze, like the third-century A.D. model above.
Javelin		The javelin throw probably originated as a display of hunting or battle skills. Throwers competed for distance—as today's athletes do. But ancient javelins were equipped with a leather strap that throwers hooked their fingers through to get more distance from their throw.
Running		Footraces of varying distances were the first and, for many years beginning in 776 B.C., the only Olympic events. An embankment curved around the sides of a broad, flat running track and served as a spectator area for the crowds the races attracted.
Long Jump		Today Olympic long jumpers leap unencumbered, but ancient athletes carried stone weights—or *halteres*—that they pumped vigorously up and down as they ran to increase their jump's momentum.
Wrestling		Greek wrestlers didn't try to pin their opponents, as wrestlers do now. Instead, the object was to throw an opponent to the ground—three times to win. Matches weren't timed, and wrestlers weren't separated into weight divisions.
Equestrian		Today's equestrian events emphasize style; the ancient Greeks' emphasized speed. Both horseback and chariot races were staged in open-air riding rings known as hippodromes. As is the case today, the Greeks awarded the winner's wreath to the owner of the horse.
Boxing		Fighters wrapped straps of leather around their hands to protect themselves during bouts, but they kept their fingertips free. Fights had no time limits, and contestants were matched not by physical size but by the luck of the draw.

FROM TOP: JAMES L. STANFIELD, OLYMPIA ARCHAEOLOGICAL MUSEUM; MUSEUM OF FINE ARTS, BOSTON; J. PAUL GETTY MUSEUM, LOS ANGELES; UNIVERSITY OF PENNSYLVANIA MUSEUM, PHILADELPHIA; MUSEUM OF FINE ARTS, BOSTON; INGRID GESKE, BILDARCHIV PREUSSISCHER KULTURBESITZ/ART RESOURCES, NEW YORK; MARIA DANIELS, TAMPA MUSEUM OF ART; UNIVERSITY OF PENNSYLVANIA MUSEUM, PHILADELPHIA

STUART FRANKLIN (BOTH)

ARCHAEOLOGY

What Lies Beneath

Antiquities make Athens's Metro museum-quality

The new Athens subway system could be called a tunnel through time. Ancient treasures unearthed during Metro construction, which began in 1992 and is still a work in progress, are now displayed in several of the city's Metro stations, including Syntagma Square (above). The artifacts, some of which were replicated for exhibit, span Athenian history from the Neolithic period, around 6500 B.C., through the modern era, and include marble and bronze statues, pottery, cobbled roads, aqueducts, inscriptions, and a mass grave from the plague years of 430 to 420 B.C.

Some stations were literally dug by hand to avoid damaging relics, more than 50,000 of which have been found so far. Such excavation takes time and money —some 50 million euros, or 60 million U.S. dollars to date.

—Jennifer Steinberg Holland

Other Olympic Construction Finds

Aphrodite shrine 2,500 years old, found at Olympic equestrian site; may also have served as a brothel
Athlete's grave relic 470 B.C. vessel depicting javelin thrower found near Olympic Village
Zagani Hill settlement Dates from about 3200 to 2800 B.C.; unearthed during airport construction, which was halted until the artifacts were removed and a settlement model was made

MARKETPLACE

An Invasion That Greeks Welcome

Tourism's contribution to the Greek economy About 15 percent of the nation's gross domestic product
Greece's rank among the world's most popular destination countries in 2002 15th
Number of tourists in 2002 14 million (86 percent visit between April and October)
Total population of Greece 11 million
Who comes the most? British and Germans, accounting for 38 percent of all arrivals
Most popular tourist destinations in Greece Athens and the islands of Crete, Rhodes, Corfu, Kos, and Zante
Number of UNESCO World Heritage sites in Greece 16
Number of Greek islands About 2,000, but only 227 are inhabited, and only 78 (including the picturesque and volcanic Santorini, above) have more than a hundred full-time residents
Percentage of hotels in Greece located on islands 59

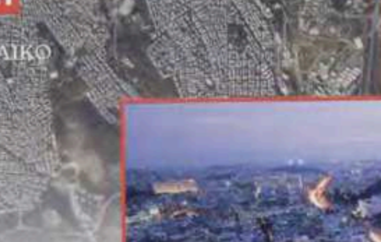
—Erla Zwingle

THIS GREAT PLACE

Parliament
Keramikos
Zappeion Exhibition Hall
Pnyka
Filopappou Hill
Acropolis
Athens
Lykavittos Hill
25 mi
26.2 mi
42.2 km
40 km
MESOGEION AVENUE
35 km
Halandri
Holargos
213 ft (65 m)
FINISH
PANATHINAIKO STADIUM

The real deal As musicians pluck long-necked bouzoukis, patrons sway to traditional Greek blues, or *rebetiko*, at club Aptaliko. Much loved, rebetiko was born early in the past century on the streets of Athens, as immigrants from Asia Minor sang longingly of home.

Zeus lives Begun in the sixth century B.C., the Temple of Olympian Zeus still honors the god of the games and the ideal of endurance.



Finish line Runners will make their last dash at Panathinaiko Stadium as 45,000 fans cheer from marble seats. Women race August 22, men the 29th. In 1896 a Greek won here.

Home stretch Island in an urban sea, the Acropolis rises above the sprawl of Athens. The city of some four million is home to more than a third of Greece's people. During the marathon many of them may be lining this usually traffic-choked artery—Mesogeion Avenue—which will funnel runners to the finish.

Running THE Marathon

Imagine yourself in classical Greece, 490 B.C. An outnumbered Athenian force has just trounced the Persian Army at Marathon, and a Greek soldier has been dispatched on a 26-mile run to Athens to relay the glorious news. He arrives, sputters "We won!" and drops dead. Or so the story goes.

Fast-forward to Athens, 1896, and the first modern Olympic Games, when the debut of the long-distance marathon duplicates the legendary run. Forward once more to 2004 and this month's XXVIII Olympic Games. Runners will again pound the historic route (satellite map) from rural Marathon through Athens, following a grueling road with more uphill than down. To meet the regulation 26.2 miles (set in the 1924 Olympics), runners will loop around the Marathon tomb and run a lap in Panathinaiko Stadium, rebuilt for the 1896 games. Visitors moving at a saner pace can meander, savoring history instead of rerunning it.

—*Lisa Moore LaRoe*

Final leg Sleek inspiration in glass, "The Runner" stands nearly 40 feet tall near the Hilton along the marathon route. Made in 1988, it's about a mile from the finish. "I wanted to do something moving in the city, like a ghost, like a soul," says sculptor Costas Varotsos.

Warm welcome Into the wee hours, Nick Loras dispenses political opinions ("I'm a Bush man!") with the whiskey and pistachios at Nick's Bar on Athens's Mavilli Square. A favorite with locals, Nick says he won't be around for the Olympics. "In August I'm going home to my village."

Labor of love After a wedding at a church in Nea Makri, just east of the route, a parishioner sweeps up. Since its founding in the fourth century A.D., the Orthodox faith has been as fundamental to Greek identity as language and history. On August 15 observances for the Assumption of the Virgin may eclipse the day's Olympic sports.

Cheered on by the gods Classical goddesses at a lawn-art shop in Pallini will offer cold comfort to marathoners on the gradual but relentless climb into the Athenian hills. The course has a net uphill rise of over 700 feet, an "unforgiving pitch," says race historian David Martin.

Paving the way An army of workers raced against the clock to finish widening and upgrading the first 20 miles of the route along Marathon Avenue, from Marathon to Stavros. This construction scene—shot at the start of the course just six months before race time—speaks volumes about the nail-biting dash to finish the gargantuan task.

Footsteps of history Shepherd Fontas Roussis, age 74, leads his sheep over the rocky hills near Marathon. Fontas lives simply in the tiny village of Kato Souli, about two miles from the starting line. His sheep may feel neglected on race day: Like most other Greeks, Fontas is proud of the games and plans to watch.

dding at a church
ute, a parishioner
the fourth cen-
been as funda-
uage and history.
he Assumption of
Olympic sports.

Inspirational detour Sunrise tints the sky over the Gulf of Petalion, backdrop for a chapel as quintessentially Greek as feta and olives. In the distance lies the island of Euboea, once a thriving Mycenaean enclave whose ruins date from 1000 B.C. At the birth of democracy in Athens, Euboea's heyday was long passed.

Fresh catch In Rafina—an Aegean port famed for its seafood and not far from the route—taverna diners wash down calamari, shrimp, and other delights with a splash of ouzo.

IKONOS SATELLITE IMAGE BY SPACE IMAGING
NATIONAL GEOGRAPHIC MAPS
DAVID McLAIN (ALL)

ATHENS UP CLOSE Interactive art: Examine this high-resolution satellite image section by section. **nationalgeographic.com/magazine/resources/0408.**

HISTORY

Good Sports

The rise of women at the Olympics

HULTON ARCHIVE/GETTY IMAGES

Females weren't allowed to compete in the Olympic games of ancient Greece; for centuries they weren't even allowed to watch. When the modern Olympics started up in 1896, organizers at first emulated the ancients and barred female participants. Founder Pierre de Coubertin thought that women's sports were "impractical, uninteresting, ungainly, and improper." Others disagreed: By the next Olympics in 1900, women were playing tennis and golf in pursuit of gold.

Slowly, more sports for women have been added to the Olympic roster. This summer females will have their own competitions in every sport category but boxing, and men and women will compete against each other in sailing and equestrian events, as they have for many years.

But female wrestlers, who make their Olympic debut this year, might take note: Sports can also be taken away. Runners' displays of apparent exhaustion after an 800-meter race in 1928 were deemed so disturbing that the event vanished from women's competitions until 1960.

—*Margaret G. Zackowitz*

1904 Archery debuts as a women's Olympic sport in London, and Britons win bronze, silver, and gold in the event.

CORBIS

1920 French tennis sensation Suzanne Lenglen (above) wins two gold medals—and notoriety for her then shocking short skirt—in Antwerp, Belgium.

1928 Track and field events open to women in Amsterdam.

1932 Texan "Babe" Didrikson (right), 21, wins two track golds and a silver in Los Angeles.

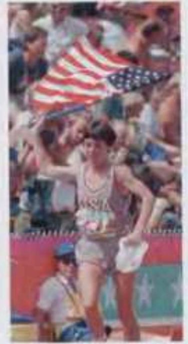
BETTMANN/CORBIS

BETTMANN/CORBIS

1960 In Rome Wilma Rudolph (left) wins three gold medals in track and field —the first American woman to do so.

1976 Romanian gymnast Nadia Comaneci (right) scores seven perfect 10s in Montreal.

BETTMANN/CORBIS



DAVID TURNLEY, CORBIS

1984 Joan Benoit (left) of the U.S. wins Olympics' first women's marathon in L.A.

1996 Atlanta games host beach volleyball's inaugural year as an Olympic sport (below).

2004 New sport to debut at this summer's Athens Olympics: women's wrestling

WALLY McNAMEE, CORBIS

DEMOGRAPHICS

Immigrants Flood Greece

Recent boom times bring a wave of newcomers

STUART FRANKLIN

"Hospitality" in Greek is *filoxenia,* or love for the foreigner. That ancient virtue has been under some strain lately. Until the 1980s, Greece was so poor that "when we spoke of migrants," says Katerina Kondouli, a former immigration official, "we meant Greeks leaving Greece." But the country's new prosperity and an Olympics building boom have turned the tide.

More than a million foreigners are now believed to reside in Greece, about a tenth of the population. Over half are Albanians, such as Antonis Skiaou (above, at left), who lives with his family outside Athens in a room attached to the factory where he works. Some newcomers make their living as artists or musicians, while others get by as day laborers. "Some villages have life again because of these immigrants," Kondouli says.

The flip side of filoxenia is xenophobia. A recent UNICEF study showed that although some 75 percent of Greek primary school children say they have an immigrant friend, 62 percent of their parents say unneeded or illegal foreigners should leave.

—Erla Zwingle

Most Foreigners

European countries with the highest proportion of foreigners:

Country	Proportion
Luxembourg	37.5%
Latvia	22.8%
Estonia	20%
Switzerland	19.7%
Austria	9.4%

SOURCE: ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, 2003

WORLD AFFAIRS

Cyprus: A Tale of Two Cities

Famagusta, an ancient Cypriot port, has changed hands many times since it was founded in the third century B.C. by the Macedonian-Egyptian king Ptolemy II. Depicted in a 16th-century engraving (above), the city has been occupied by French Lusignan kings, the Genoese, Venetians, Ottomans, and British, among others. So when a Turkish invasion of Cyprus in 1974 divided the island into a Greek Cypriot-controlled south and a Turkish-occupied north—leaving Famagusta in the hands of the Turkish military—well, life struggled on.

Not so for the neighboring suburb of Varosha, a Mediterranean resort community developed mostly during the 1960s and early 1970s and populated by Greek Cypriots. Ever since its 40,000 residents fled south three decades ago when Turkey invaded, Varosha has been a ghost town, barricaded from the rest of the world. Its former five-star hotels stand weary with neglect, and its shop windows display decades-old prices. Protected by UN Security Council resolutions, the town can be reinhabited only by its 1974 residents. After a UN plan to reunify Cyprus failed this April, they aren't likely to return anytime soon.

—Cate Lineberry

HISTORIC CITIES RESEARCH PROJECT, THE HEBREW UNIVERSITY OF JERUSALEM, THE JEWISH NATIONAL AND UNIVERSITY LIBRARY

My Seven

CDs to Start Your World Music Collection

Mickey Hart *Percussionist for the Grateful Dead, ethnomusicologist*

Some musicians just want to play music. Mickey Hart wants to save it. An advocate for the preservation of global music, Hart has lent his name to a series of world-music recordings and established a fund to help funnel royalties back to the artists. Here are his recommendations for starting your own world music collection (including recordings he helped produce).

JOHN WERNER (TOP LEFT); SCOTT HARRISON (ABOVE)

1 ***Freedom Chants From the Roof of the World,* The Gyuto Monks**
Imagine a single human voice sustaining up to three notes simultaneously. That's the sonic miracle of the Gyuto monks (right), recorded when they came to North America from Tibet to chant for the freedom of their nation and oppressed people worldwide. (released in 1989)

2 ***Drums of Passion,* Babatunde Olatunji**
A magical session of West African trance music by a Nigerian drummer who would become my mentor. Hearing his music changed my life. (1959, reissued 2002)

3 ***Sarangi: The Music of India,* Ustad Sultan Khan**
A recording (below) of an informal performance in California by some of India's greatest musicians. Sensual sounds that never grow old. (1974, reissued 1988)

4 ***Honor the Earth Powwow: Songs of the Great Lakes Indians***
The Ojibwa, Menominee, and Winnebago perform at a powwow deep in the Wisconsin forest. (1986, reissued 1991)

5 ***The Music of Upper and Lower Egypt***
Six works of folk music I recorded in Aswan and Alexandria while the Grateful Dead toured Egypt. Music for the gods. (1978, reissued 1988)

6 ***Voices of the Rainforest***
Field recordist Steven Feld weaves a 24-hour cycle of primal sounds by the Kaluli people of Papua New Guinea into 60 essential minutes. (1991)

7 ***Mbuti Pygmies of the Ituri Rainforest***
Often singing in rounds and accompanied by handmade flutes, these voices will carry you to places unknown. I first heard the sounds of the Pygmies as a boy. For me this music is dream time. (1957, reissued 1992)

HEAR THE WORLD
To understand what Mickey Hart's talking about, listen to selected audio clips from his world music list at **nationalgeographic.com/magazine/0408.**

Do It Yourself

AUSTRALIA'S BANJO PATERSON (SEE PAGE 2)

DAVID ALAN HARVEY

TRY IT AT HOME

Write Your Own Bush Poetry

Even if you know nothing about the Australian bush, that doesn't mean bush poetry isn't for you. Says Frank Daniel, president of the Australian Bush Poets Association, "We write about life on the land, broken chain saws, the supermarket, bingo games. Topics vary dramatically." The only requirements: Poems must focus on Australia, and they must rhyme.

For beginners, Daniel offers some tips: Read poems by Banjo Paterson (1864-1941) and Henry Lawson (1867-1922). If an idea pops to mind, write it down, even if it's only one line. "It'll grow," says Daniel. Humor helps. And rhythm is essential. Bush poetry is meant to be read aloud, even performed in competitions like the Waltzing Matilda Bush Poetry Festival and the Man From Snowy River Bush Festival (left). Entries from overseas are welcome. Just remember: Ringer is Australian for cowboy, and a ranch is called a station. Bingo, however, is still bingo.

GO THERE

A Pilgrimage to the Heart of Banjo Country

Although Paterson's poems cover a lot of terrain, you can visit just a few spots and still get a sense of his life and legacy.

DAVID ALAN HARVEY; NATIONAL GALLERY OF VICTORIA, MELBOURNE (RIGHT)

In Gladesville, a suburb of Sydney, visit Rockend Cottage (now the Banjo Paterson Cottage Restaurant), where Banjo lived while attending grammar school. Then steer south to the Man From Snowy River Bush Festival, held each April in Corryong, Victoria, for bull riding, line dancing, brumby chasing, rodeo (above), and more. Finally, head to the hills around the Snowy River for horse trekking with folks for whom Banjo's famous poem is a little slice of home.

PICKS

3 paintings

Banjo Paterson's poems helped create an iconic image of Australia's bush. So too did a band of painters—contemporaries of Paterson's—who rejected the notion of portraying Australia as a delicate English garden. Instead, their paintings celebrated the heat and dust of the bush, says **Roff Smith,** author of the Banjo story. Three of Roff's favorites:

- **"Shearing the Rams"** Tom Roberts's 1890 painting (detail above) captures the intensity of the shearing shed.
- **"The Purple Noon's Transparent Might"** Arthur Streeton's 1896 vision of the bush was created in Sydney's outer suburbs.
- **"A Holiday at Mentone"** Charles Conder's 1888 work, says Roff, beautifully renders "the blinding hot afternoon sun."

WEBSITE EXCLUSIVE

Hear an Australian read Banjo Paterson's poems at **nationalgeographic.com/magazine/0408.**

Who Knew?

MEDICINE

Please Pass the Sugar

. . . with a grain of salt

One of the world's greatest wonder drugs is not a drug at all. It's a placebo—a sugar pill or perhaps an injection of saline solution. There's no pharmacological component whatever in a placebo, but darned if it doesn't kill the pain, revive the spirit, cure what ails us.

Placebos even take the form of surgery. Arthroscopic knee surgery is a remedy for arthritis, but researchers have matched its effectiveness with a sham operation. They sedated patients, nicked their knees, woke them up, and told them the operation was a success. Two years of follow-up showed that pain relief and improved function were the same for placebo patients as for those who had real operations.

How do we explain the placebo effect? Some might say, "It's all in your mind." But the mind-body distinction isn't sharp. It's better to say that the mind can affect how the body copes with a problem.

In a recent study 50 percent of Parkinson's patients showed improved motor function after receiving a placebo—a saline injection. This improvement was not something the patients imagined. Parkinson's symptoms are typically caused by the failure of brain cells to produce dopamine, a neurotransmitter. Brain scans confirmed that just the anticipation of relief triggered dopamine production. Thinking they'd get better caused patients to have a real chemical response with a real effect.

Tor Wager, a psychologist at Columbia University, led a recent study in which test subjects were told that one skin cream would reduce pain while another

wouldn't. Wager put the creams on two spots on the subjects' arms and then applied enough heat to produce a burning sensation. Brain scans and verbal reports indicated that subjects perceived less pain with the cream that "really worked," even though the creams were identical.

The opposite of the placebo effect also happens. This is called the "nocebo" effect. More than one out of five patients given a placebo reports unexpected adverse side effects. These patients have headaches, they can't sleep, they feel nauseated.

In one drug trial, some of the patients receiving a placebo were told they might experience gastrointestinal irritation. The subjects who heard the warning experienced more distress and were six times more likely to drop out of the trial altogether.

Placebos don't work for heart attacks or tumors. There are limits to the power of suggestion. But much of medicine revolves around relatively subjective forms of distress: chronic pain, upset stomach, and so on. That's where a sugar pill works its magic. "Our beliefs," says Wager, "have powerful influences on our experiences."

So the next time you feel under the weather, try the simplest cure first: Imagine yourself healed.

—Joel Achenbach
WASHINGTON POST STAFF WRITER

Read the Label

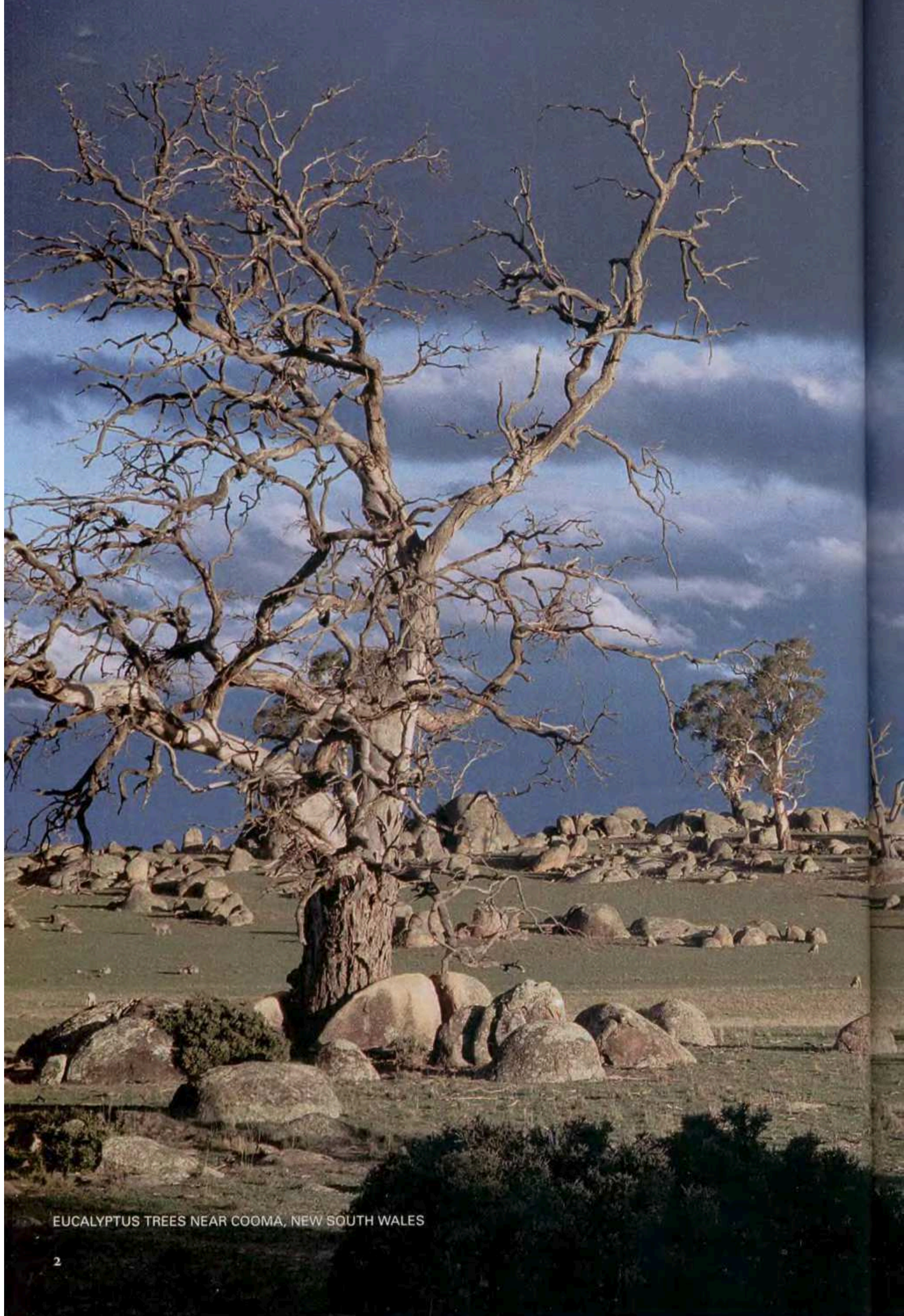
Despite the implication of the words on every drug label in your medicine cabinet, inactive ingredients, properly called excipients, do quite a bit: Some 2,500 are used in medications approved by the FDA. They transport drugs to specific parts of the body, time the release of active ingredients, bind compounds, dilute active components, improve color and taste. Some of the most common:

Gelatin (gelling agent, coating) **Lactose** (binder, filler) **Magnesium stearate** (lubricant) **Microcrystalline cellulose** (suspending agent, disintegrant, binder, filler) **Shellac** (coating, sealer) **Starch** (emollient, absorbant, binder, filler) **Sucrose** (coating, sweetener, binder, filler) **Talc** (dissolution retardant, lubricant, filler) **Titanium dioxide** (coloring agent).

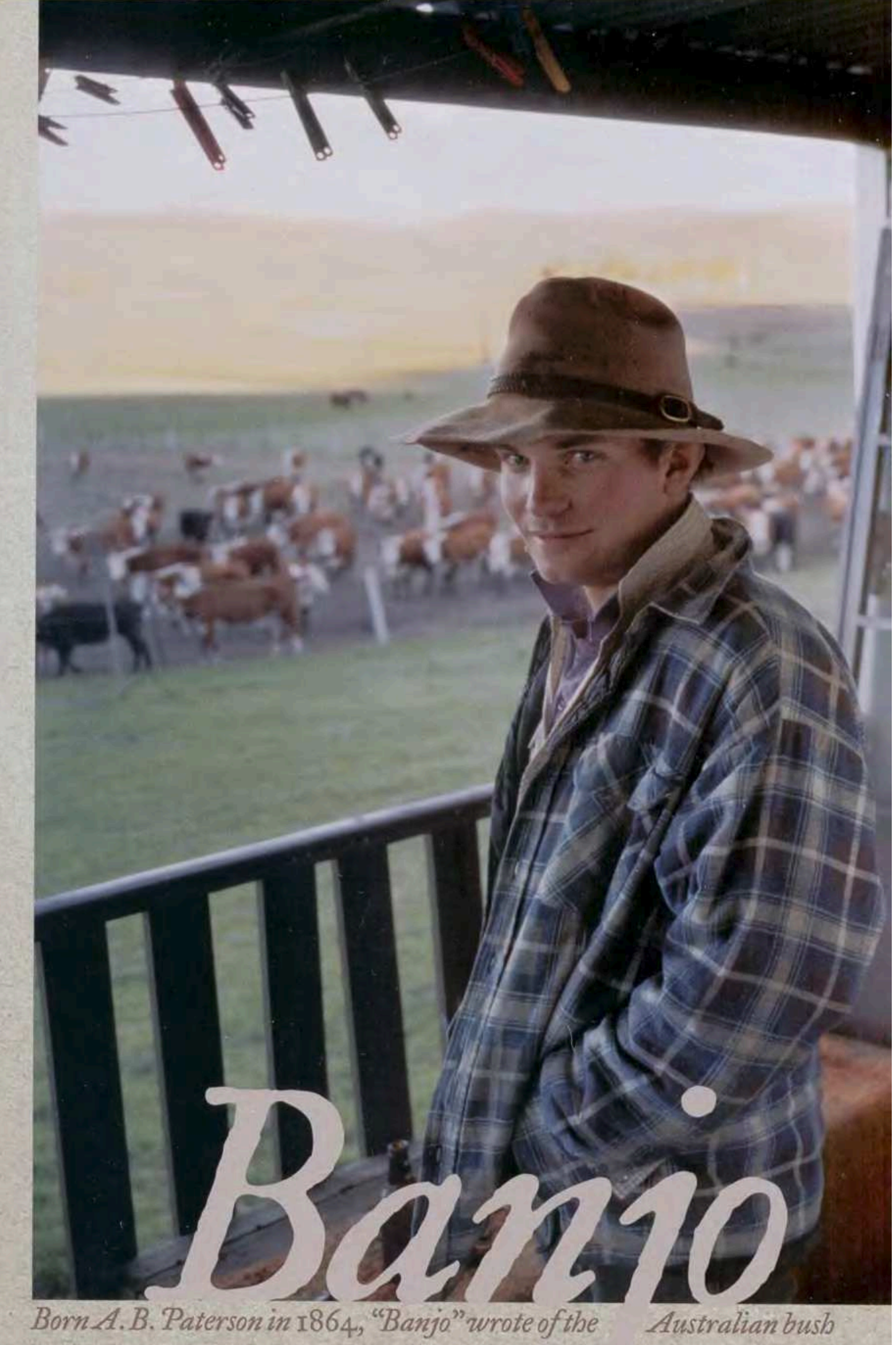
—Heidi Schultz

WEBSITE EXCLUSIVE For more on drug ingredients, and for links to Joel Achenbach's work, go to Resources at nationalgeographic.com/magazine/0408.

PHOTO ILLUSTRATION BY CARY WOLINSKY AND BARBARA WOLINSKY

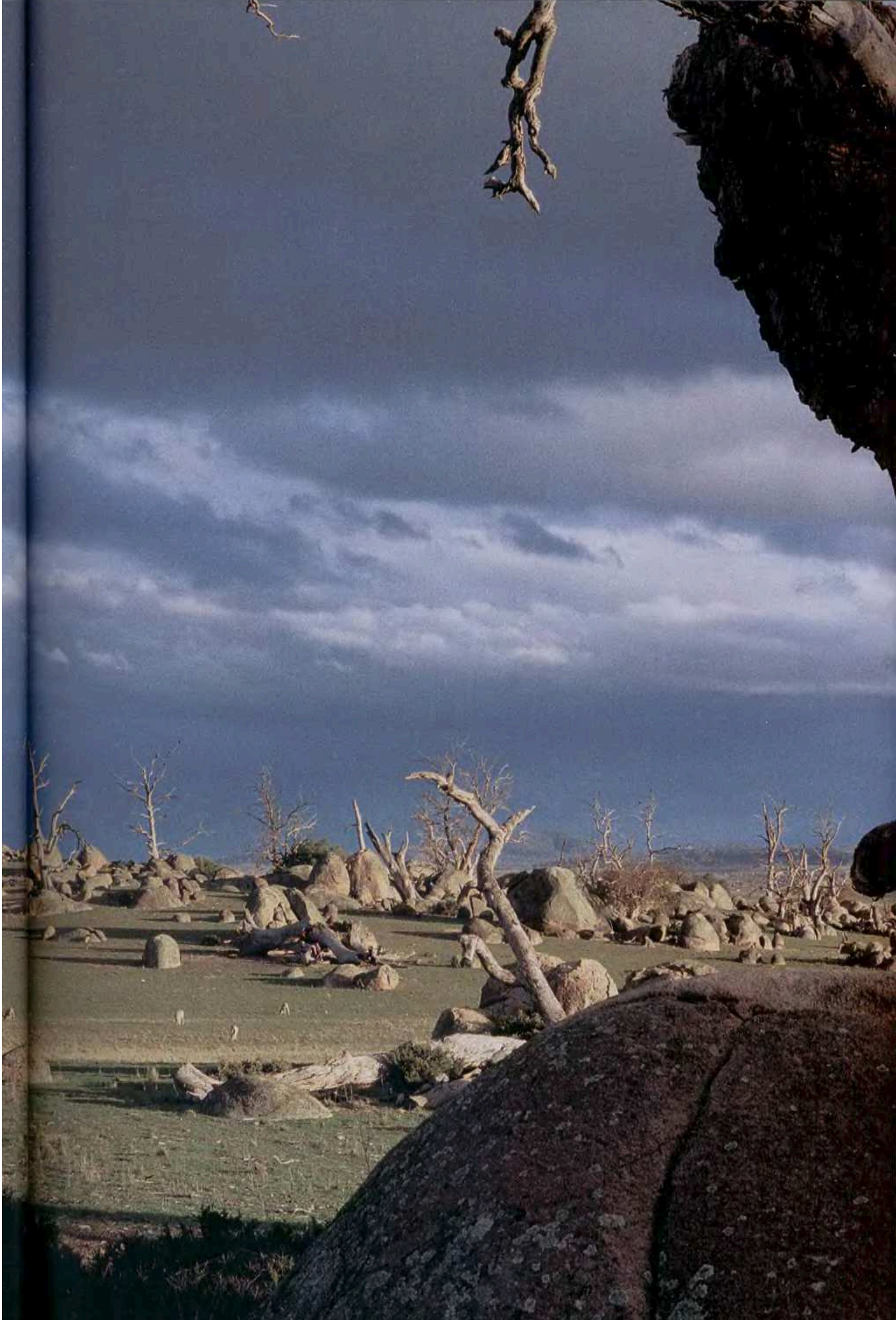


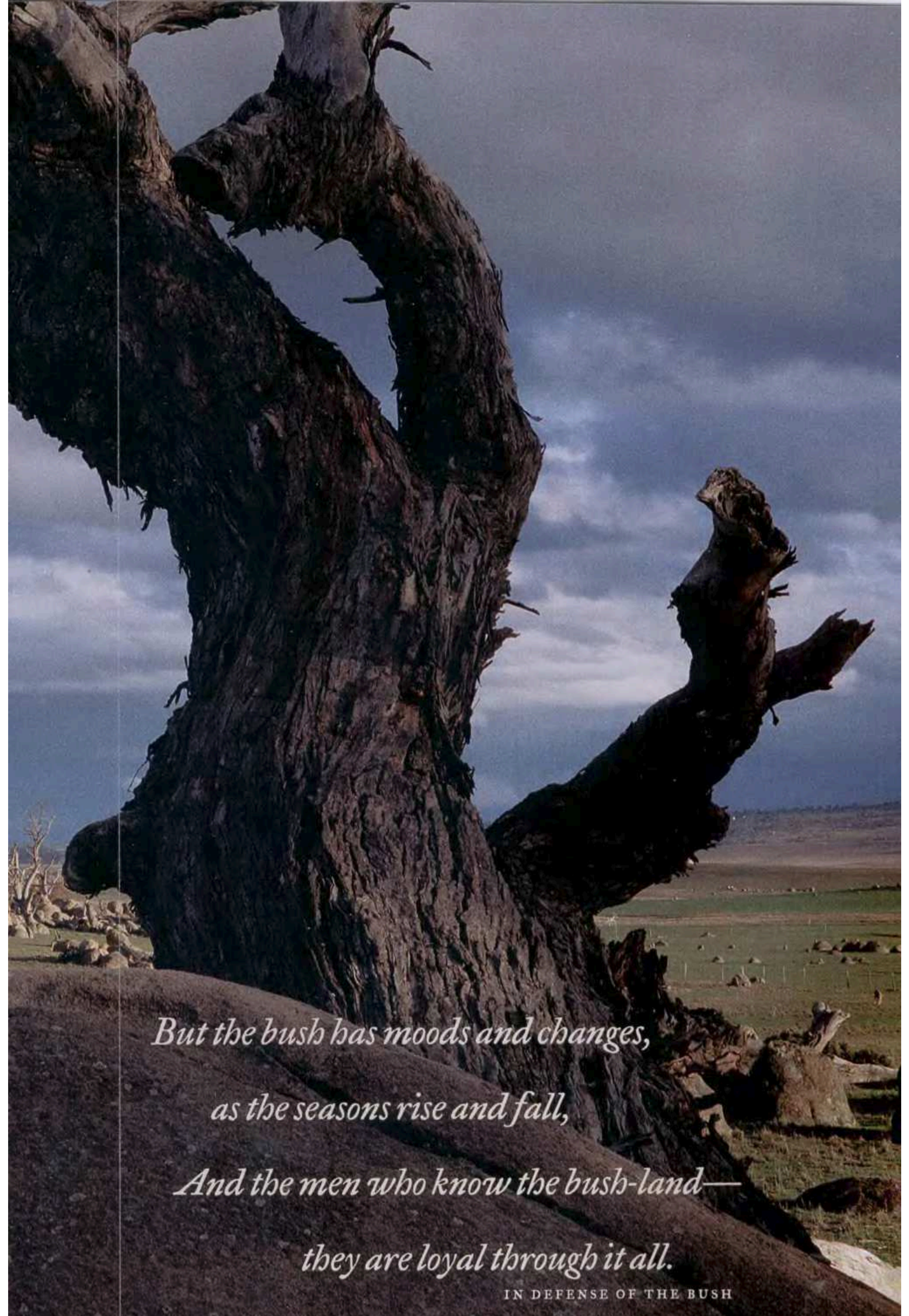
EUCALYPTUS TREES NEAR COOMA, NEW SOUTH WALES



Banjo

Born A. B. Paterson in 1864, "Banjo" wrote of the Australian bush in "Waltzing Matilda," "The Man From Snowy River," and hundreds of other poems. Aussies have been singing his tune ever since.





But the bush has moods and changes,

as the seasons rise and fall,

And the men who know the bush-land—

they are loyal through it all.

IN DEFENSE OF THE BUSH

Waltzing Matilda

Oh! there once was a swagman camped in the Billabong,
Under the shade of a Coolabah tree;
And he sang as he looked at his old billy boiling,
"Who'll come a-waltzing Matilda with me."

Who'll come a-waltzing Matilda, my darling,
Who'll come a-waltzing Matilda with me?
Waltzing Matilda and leading a water-bag—
Who'll come a-waltzing Matilda with me?

Down came a jumbuck to drink at the water-hole,
Up jumped the swagman and grabbed him in glee;
And he sang as he put him away in his tucker-bag,
"You'll come a-waltzing Matilda with me!"

Down came the Squatter a-riding his thoroughbred;
Down came Policemen—one, two and three.
"Whose is the jumbuck you've got in the tucker-bag?
You'll come a-waltzing Matilda with me."

But the swagman, he up and he jumped in the water-hole,
Drowning himself by the Coolabah tree;
And his ghost may be heard as it sings in the Billabong,
"Who'll come a-waltzing Matilda with me?"

Ben Green, a ringer at Cobungra Station near Omeo, Victoria (left), can ride a horse, mend a fence, herd cattle—and belt out "Waltzing Matilda." The tale of a hungry itinerant worker, or swagman, who gets caught stealing a sheep and chooses death over losing his freedom, the poem stands as Australia's unofficial national anthem.

By Roff Smith

Photographs by David Alan Harvey

I had written him a letter which I had, for want of better
Knowledge, sent to where I met him down the Lachlan years ago;
He was shearing when I knew him, so I sent the letter to him,
Just on spec, addressed as follows, "Clancy, of The Overflow."

Leaving the city behind, Paterson, pipe in hand, regularly ventured into the bush for poetic inspiration. Though his nom de plume, the Banjo, was the name of a racehorse, Paterson found his creative legs only when he got off the beaten track.

It started out as a routine brief to chase up a deadbeat: A stockman from up-country New South Wales had been refusing to pay some debts, and his creditors wanted something done about it. They turned the matter over to their solicitor, a dapper young man named Andrew Barton Paterson, of the Sydney law firm Street & Paterson. He duly took up the case, writing the man a stern reminder and advising him to settle up. But it was no use. The Australian outback was simply too big and easy and fancy-free. The letter bounced back, undeliverable, with the simple explanation scrawled across it: "Clancy's gone to Queensland droving and we don't know where he are."

The plaintiffs couldn't have been too pleased, but their lawyer had a quiet chuckle, imagining this Clancy fellow at that very moment a thousand miles away in the bright

NATIONAL LIBRARY OF AUSTRALIA

Queensland sunshine, spending his days on horseback and his nights camped out beneath a canopy of stars, gloriously free and untouchable while his creditors, their lawyers, and all the rest of polite society were stuck impotently behind their desks. Paterson took up his pen again and began to write, not a letter this time but a little gem of a ballad, for he had a sideline writing humor and verse for a popular weekly magazine under a pen name, "the Banjo"—a name he borrowed from a racehorse his family used to own.

In 32 breezy lines—leaving out the real-life Clancy's awkward legal situation—he told the story of his errant letter, mused about a drover's simple unfettered life in the bush and contrasted it with the noise, dirt, haste, and stifling anonymity of his own life in the city, then wrapped it up with a note of whimsy:

And I somehow rather fancy that I'd like to change with Clancy,
Like to take a turn at droving where the seasons come and go,
While he faced the round eternal of the cash-book and the journal—
But I doubt he'd suit the office, Clancy, of The Overflow.

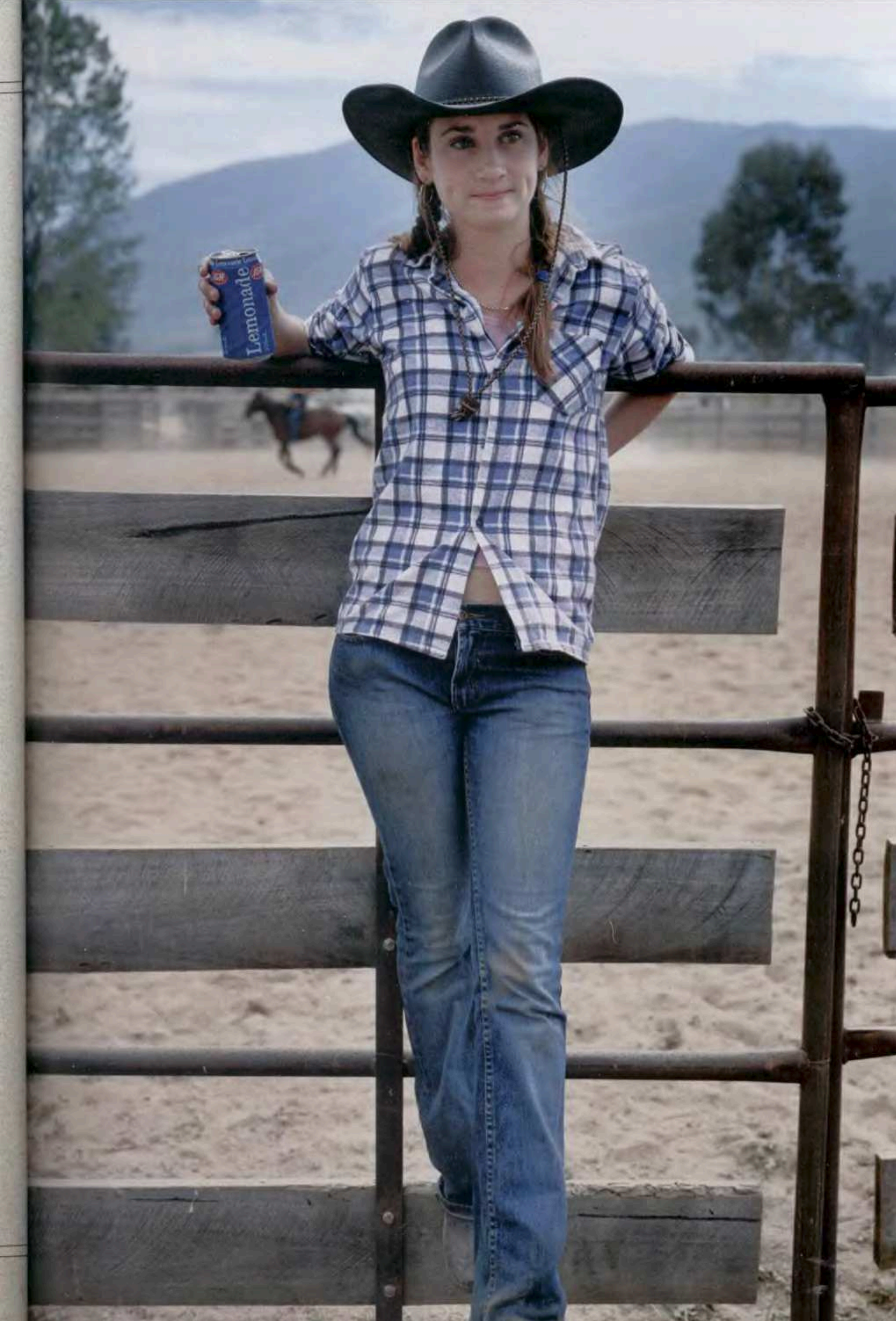
The poem was an instant hit when it appeared in the Christmas edition of the *Bulletin* magazine in 1889 and remains one of Australia's best loved poems. It caught the mood of the nation just after it had celebrated its centennial in a flush of patriotic pride and was casting about in a nostalgic way for a sense of identity in a fast-changing world. In Clancy, Australians found a beauty: the rugged, sun-bronzed laconic drover, too big of spirit ever to fit in any rabbit hutch of an office and utterly at home in the wide brown land down under. They took him straight to heart, and they've loved him ever since.

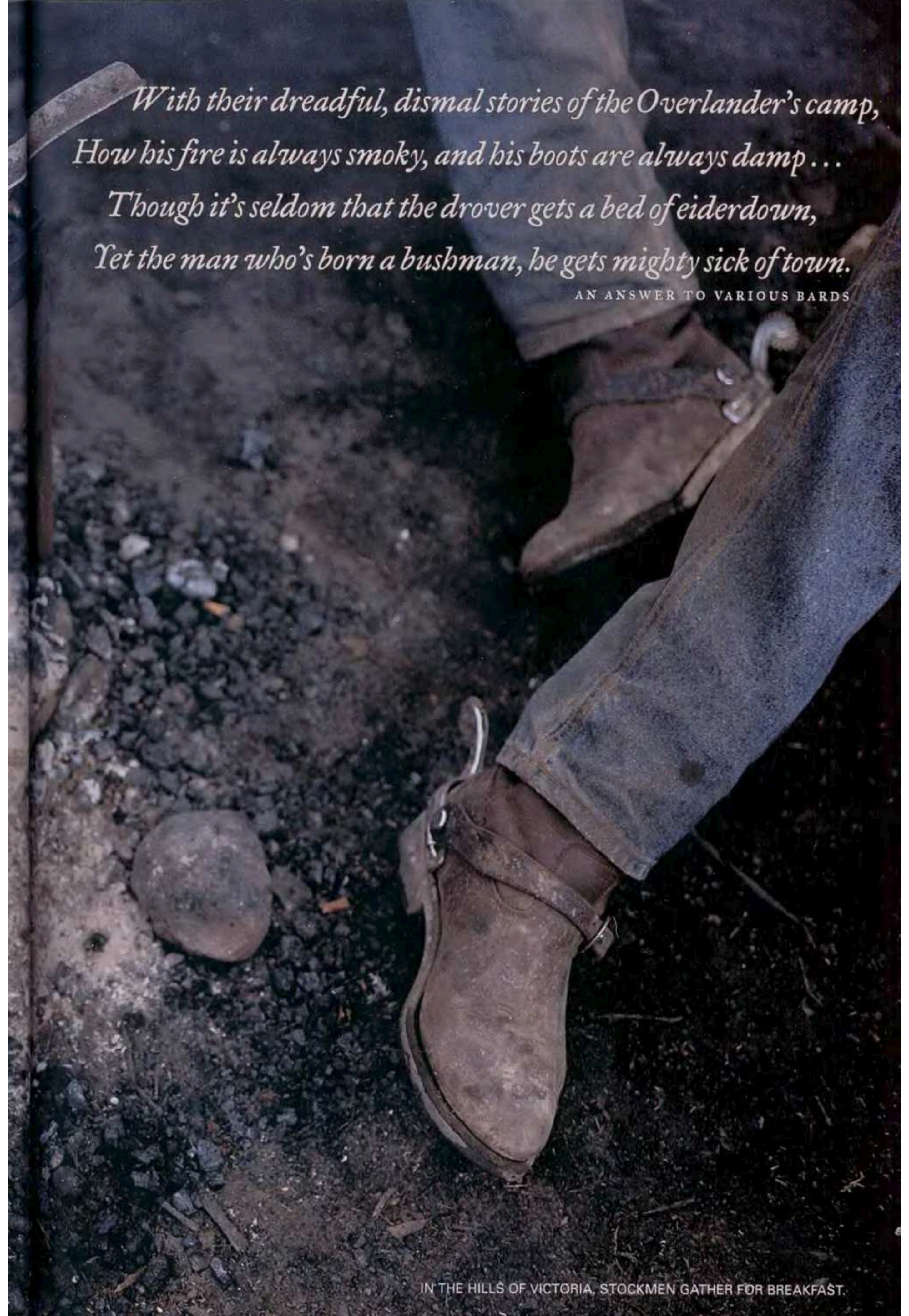
It didn't do A. B. Paterson any harm either. Aside from the thirteen shillings and six pence the magazine paid him for the poem, about double the fee he'd collect for a legal consultation, "Clancy of The Overflow" marked the start of a golden decade for the lawyer-turned-poet. In a burst of creativity, which spanned much of the 1890s, the Banjo produced a cavalcade of poems, ballads, and songs—classics such as "The Man From Snowy River" and "Waltzing Matilda"—that established him as Australia's best loved poet.

His secret was simple. As Mark Twain did in America, Banjo Paterson wrote as though Australia were the center of the world. His stories sprang straight from the Australian bush; they could have been written nowhere else. They were the first truly Australian ballads, and they gave the nation its own unique cast of heroes—the romantic drover on the plains, the fiercely independent swagman who preferred death to surrender, and the shy mountain-bred horseman from the Snowy River district who took cliffs and fallen timber in his stride.

And more than a century later they remain feisty celebrations of Australianness: from a jubilant Oscar-winning Russell Crowe decanting a few of his favorite lines from "Clancy" at the 2001 Academy Awards, to the rousing choruses of "Waltzing Matilda" at

"Eventually I want to live in Melbourne," says 18-year-old Stephanie Judd. "There's more opportunity." At her age, Paterson found himself in a tiny law office in Sydney and felt fenced in. If he couldn't have dust on his boots, well, he could write about it.


Lemonade



With their dreadful, dismal stories of the Overlander's camp,
How his fire is always smoky, and his boots are always damp...
Though it's seldom that the drover gets a bed of eiderdown,
Yet the man who's born a bushman, he gets mighty sick of town.

AN ANSWER TO VARIOUS BARDS

IN THE HILLS OF VICTORIA, STOCKMEN GATHER FOR BREAKFAST.

Movie night in Swanpool offers blessed time away from the unrelenting boredom of the same thing everyday—or so Banjo's contemporary, poet Henry Lawson, might have said. He argued that Banjo's love affair with the bush was a fantasy. "There is nothing to see" out there, he wrote, "and not a soul to meet."

the 2003 Rugby World Cup, to the electrifying "Man From Snowy River" stock horse sequence at the opening ceremony of the 2000 Olympic Games in Sydney. Paterson's portrait, jaunty in a wide-brimmed hat, has graced Australia's ten-dollar bill since a redesign in 1993. In a poetic touch the engravers inscribed the words to "The Man From Snowy River"—all 104 lines of it—in microprint around the poet's face, presumably to thwart counterfeiters or at least ensure that any successful ones are patriotically Australian.

It's been quite a while since anyone sat behind a partner's desk in an office on Bond Street—where the firm of Street & Paterson once practiced law—and whimsied about trading places with a drover. The escapist fantasy among Australians these days is telecommuting from some sleepy seaside community up (or down) the coast, an old fishing village perhaps, that has been "discovered" only to the extent that it already has broadband access and a smart café where you can buy a decently constructed macchiato or piccolo latte. This is a nation of city slickers at heart, bright, sassy, outward-looking, relentlessly cosmopolitan, and loving it. By the latest reckoning more than 80 percent of Australians live in an urban setting, typically only a short drive from the beach and mainly on the busy eastern seaboard. Twenty percent live in metropolitan Sydney, a suburban sprawl that stretches 80 miles from end to end. Their 21st-century bustle is about as far removed from the bucolic ways of the bush as it's possible to be: Many have never been to the outback at all, know very little about it, don't appear to give it much thought, and sometimes seem downright disdainful of it.

Yet when one of the worst droughts in century struck in 2002-2003, there were tele thons in the cities, fun-runs, T-shirt sale and a glittering celebrity-studded concert Sydney to raise millions for the Farmhar

Appeal. "Lend a hand to your mate on the land" went one of the promotional slogans. When the drought-relieving rains finally fell, in February 2003, they received rapturous coverage. Wars, terrorism, and global events were knocked off the front page of the *Australian,* the country's national newspaper, by a delightful photo of three-year-old Lucy Geddes, a farmer's daughter who'd never experienced rain in her life, splashing in a puddle on the family property near Brewarrina, in western New South Wales.

And when outback country-music legend Slim Dusty died last year at the age of 76, after a lifetime of writing songs about the bush and endless touring of remote towns and Aboriginal communities, he was accorded a state funeral, attended by the prime minister and a flock of dignitaries and celebrities from the music world. Flags were flown at half-staff. The congregation sang his famous 1957 hit "The Pub With No Beer," and his flag-draped coffin, with his old bush hat on top of it, was carried from Sydney's Anglican cathedral to the strains of "Waltzing Matilda."

"The bush occupies a funny sort of place in the Australian psyche," says Melbourne author, demographer, and social commentator Bernard Salt. "It's a bit like Melbourne's old-fashioned trams. Nobody wants to ride them, but they're a part of our heritage, and we love to hear them rattling down the streets just like always. It's the same with the bush. We want to know there are still people out there leading those picturesque 'Clancy of The Overflow' kinds of lives, even though it's something we'd never do ourselves."

Nobody understood, or embodied, these inconsistencies better than Banjo Paterson. He was born in the bush, in 1864, on a sheep station in New South Wales, and he might have stayed there, remaining a grazier all his life and never writing a word, if it hadn't been for the droughts that forced his family to sell. His father was hired by the new owners to manage the property. Ten-year-old "Barty," as he was known in the family, was packed off to live with his grandmother in Sydney, so he could get an education and escape a life of low-paying drudgery as a station hand.

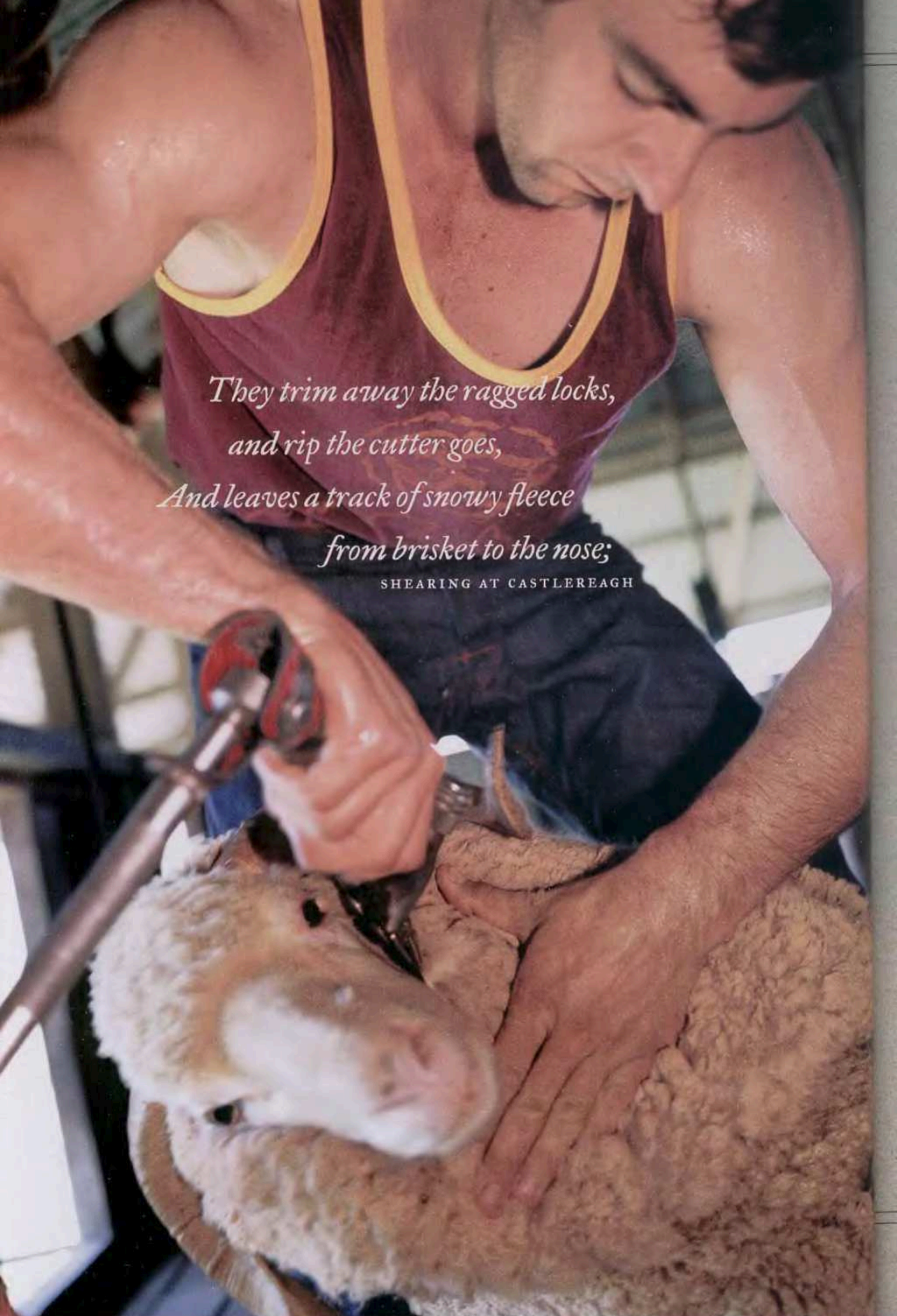
When he finished school at 16, he joined a law firm as a lowly clerk and began a life of higher paying drudgery in the desk-bound world of the city. He worked his way up the office ladder and qualified as a solicitor when he was 22.

> By the time he landed the brief to dun the elusive Clancy, he had been behind a desk for nine years, fidgeting under the weight of his own expectations. Poetry became his escape, Clancy his muse.

"There was nothing preventing him from walking out of his dingy little office any time he liked and finding work as a drover, if that was what he truly wanted to do," said Darvall Dixon, a cattleman in the Snowy River district and a distant cousin of Paterson's.

"It's a question of what you're willing to give up. He had a pretty lucrative career going. Living a footloose drover's life wasn't something he really wanted to do, so much as something he would love to have done. He'd have liked to have had a romantic past like that to look back upon."

And so he created one. He was already contributing verse to the *Bulletin,* a popular weekly with a nationalist flavor and a bent for the bush. Although he continued in the quiet, secure, and well-compensated practice of law for another ten years, after office hours he let his fancies roam free and, as the Banjo, traipsed vicariously around the bush,



They trim away the ragged locks,
and rip the cutter goes,
And leaves a track of snowy fleece
from brisket to the nose;

SHEARING AT CASTLEREAGH

chronicling the exploits of swagmen and drovers part of him wished he dared be like. He wrote what he knew, the river-and-range country of Australia's southeast, but he made it all his own—a cheery land inhabited by salt-of-the-earth characters who met adversity with pluck, ingenuity, and the laconic wit of outback Australia. He sketched them with such verve and good-humored affection they became real, and his classic Australian landscapes, from the "gorges deep and black" along the Snowy River to the hot brassy "land of lots o' time along the Castlereagh," as familiar as childhood memories. He put out the welcome mat, and generations of Australians dropped in. His poetic world became the nation's own *Secret Garden*, a lyrical outback that embodied all that was good and unique about Australia and the Australian character.

And it still is. While that gaudy whip-cracking stock horse display at the Olympics opening ceremony might be considered a tourist event, staged to promote a once-upon-a-time Australia to believing visitors from the rest of the world, it proved so popular with locals that organizers later took a version of it on the road—with a troupe of dancers, trick riders, horses, dogs, stagecoaches, and an enormous set that included stage rocks and tons of local earth for the mountain riding scenes—and performed to sellout crowds around Australia. The CD soundtrack for the show, which includes a dramatic recitation of "The Man From Snowy River," debuted at number 20 on the Australian charts.

Another production, also based on the ballad, proved a popular attraction at Sydney's annual Royal Easter Show, while a play based on Paterson's life and works recently had a good run in Melbourne. Meanwhile a 24-million-dollar (U.S.) film version of "Clancy of The Overflow" is in the works—the biggest budget ever for a locally financed film. No matter who lands the role as the nation's best loved deadbeat, and some big names have been bruited about, one certain star of the piece will be the immense landscapes of Queensland's legendary Channel Country, the "Overflow" of the poem.

Born on a sheep station, Banjo left early—and forever looked back. Between shearings, sheep get trimmed around the butt and eyes. "It's good for them," says Pete Bock (left), "because it keeps away the flies."

Paterson's stories and characters might have been fictional and his settings romanticized, but they always had a grounding in fact. He was a keen listener and observer and, with a lawyerly concern for detail, spent hours poring over maps and gazetteers to get his locations and landscapes right. So much of his imagery remains: the timeless outback settings; the mounted stockman in tattered Akubra hat and tobacco-brown oilskin, stockwhip coiled over his shoulder as he nudges his mob through a backlit haze; the old shearing sheds, those rambling timber-framed structures clad in corrugated iron, dim and musty inside and smelling of lanolin, and full of rowdy camaraderie at shearing time; the bookie with his leather satchel and tote board at country race meetings—a staple of Paterson's poetry—and a rollicking, booted, hatted crowd out to have a good time and beat the favorite. Sure, the characters may all be set against an enduring backdrop of drought and hardship and uncertainty, which Banjo tended to gloss over, but that doesn't make them any less real.

Yet they do need to be taken with a grain of salt, as Banjo himself cautions lightly in poems such as "A Mountain Station," a humorous ballad about a tenderfoot who

STOCKMEN PREPARE FOR A COMPETITION AT THE MAN FROM SNOWY RIVER BUSH FESTIVAL IN CORRYONG.

The rule holds good in everything in life's uncertain fight;
You'll find the winner can't go wrong, the loser can't go right.
You ride a slashing race, and lose—by one and all you're banned!
Ride like a bag of flour, and win—they'll cheer you in the Stand.

RIDERS IN THE STAND

buys a beautiful grazing property along the Murrumbidgee and discovers, to his chagrin, how precarious it really is to make a living in the bush. Banjo puts it more whimsically in another poem, "Come-by-Chance," a sort of reverie about a location of that name he discovered in the postal guide and imagines as a perfect outback idyll where:

. . . one's letters and exchanges come by chance across the ranges,
Where a wiry young Australian leads a pack-horse once a week,
And the good news grows by keeping, and you're spared the pain of weeping
Over bad news when the mailman drops the letters in the creek.
But I fear, and more's the pity, that there's really no such city,
For there's not a man can find it of the shrewdest folk I know;
"Come-by-Chance," be sure it never means a land of fierce endeavour—
It is just the careless country where the dreamers only go.

I never made it to Come-by-Chance myself, at least not the geographic one. I found its location on the map, all right—a lonely spot in north-central New South Wales—but in a nice bit of dramatic unity, a fickle burst of outback rain washed out the track. In 5,000 miles of bouncing along gum-shaded back roads and long empty sweeps of outback highways on Paterson's trail, I came by chance across plenty of other Banjoesque reality. Like 89-year-old Betty Osborne, an old-family grazier whose father played polo as a young man in the 1890s for the hard-riding mountain team that Paterson glorified in "The Geebung Polo Club." She still runs a 7,000-acre cattle station in the southern highlands of New South Wales from an elegant sandstone homestead built by an uncle in 1884 and where she grew up as a child. "City people seem surprised to find that we do in fact have nice china out here in the country," she said as we talked in her kitchen. And when I was leaving and needed directions back to town, she knelt down and expertly sketched a bushman's "mud map" in the dirt; she was a blend of courtliness and down-to-earth practicality that seemed to belong to another age.

And then there was the bold horsemanship of 44-year-old Kerry Wellsmore, a sixth-generation grazier in the Snowy River district, who was out surveying lines for a firebreak in the high country during the terrible bushfires of 2003 when the wind shifted and he found himself trapped by a fast-moving wall of flame and had to gallop cross-country over the same harrowing mountain wilderness Paterson described in "The Man From Snowy River."

"I looked behind me once and just went weak," he said. "The flames were so close I could feel ash tickling my neck. I just clung to the horse and rode as hard as I could through the smoke and fallen trees towards a water hole I knew a couple of miles away." They raced nip and tuck, the flames gaining on the uphills, horse and rider picking up ground on the descents. They made the water hole and sheltered there as the flames roared past, and in a 21st-century touch he called his wife on the satellite phone to tell her he was safe.

I even encountered those quirky improbabilities that would seem to belong only in one of Paterson's more whimsical efforts: like the prayer service in Barcaldine, where graziers had gathered in the sheep pavilion at the local fairgrounds to pray for rain, only to have the first hymn, "How Great Thou Art," disrupted by a cloudburst, the first good drenching in two years. As we stood beneath

the dripping iron roof, watching it pelt down and listening to one of the local ministers wax lyrical about the power of faith, a craggy-faced old grazier pointed to where his truck sat, a good brisk dash away and now up to its hubcaps in shimmering mud and water. "Aw, can't you see He's just having a laugh?" he growled good-naturedly. "Not a bloody one of us brought gum boots or an umbrella, and I'm in me best shoes!"

I wasn't the only one on the highways and back roads looking for this mythical Australia. Fifteen thousand out-of-towners, a large part of them city folk, descend on Corryong, a remote mountain town in northeast Victoria, every April for the Man From Snowy River Bush Festival, a three-day celebration of Banjo's most patriotic ballad. There are horse parades down the main street, reenactment rides in the hills, a bush poetry competition, and, out at the showground, the main event: a grueling sort of outback decathlon, where top station hands and horsebreakers from all around Australia compete for the title of the Modern Man From Snowy River.

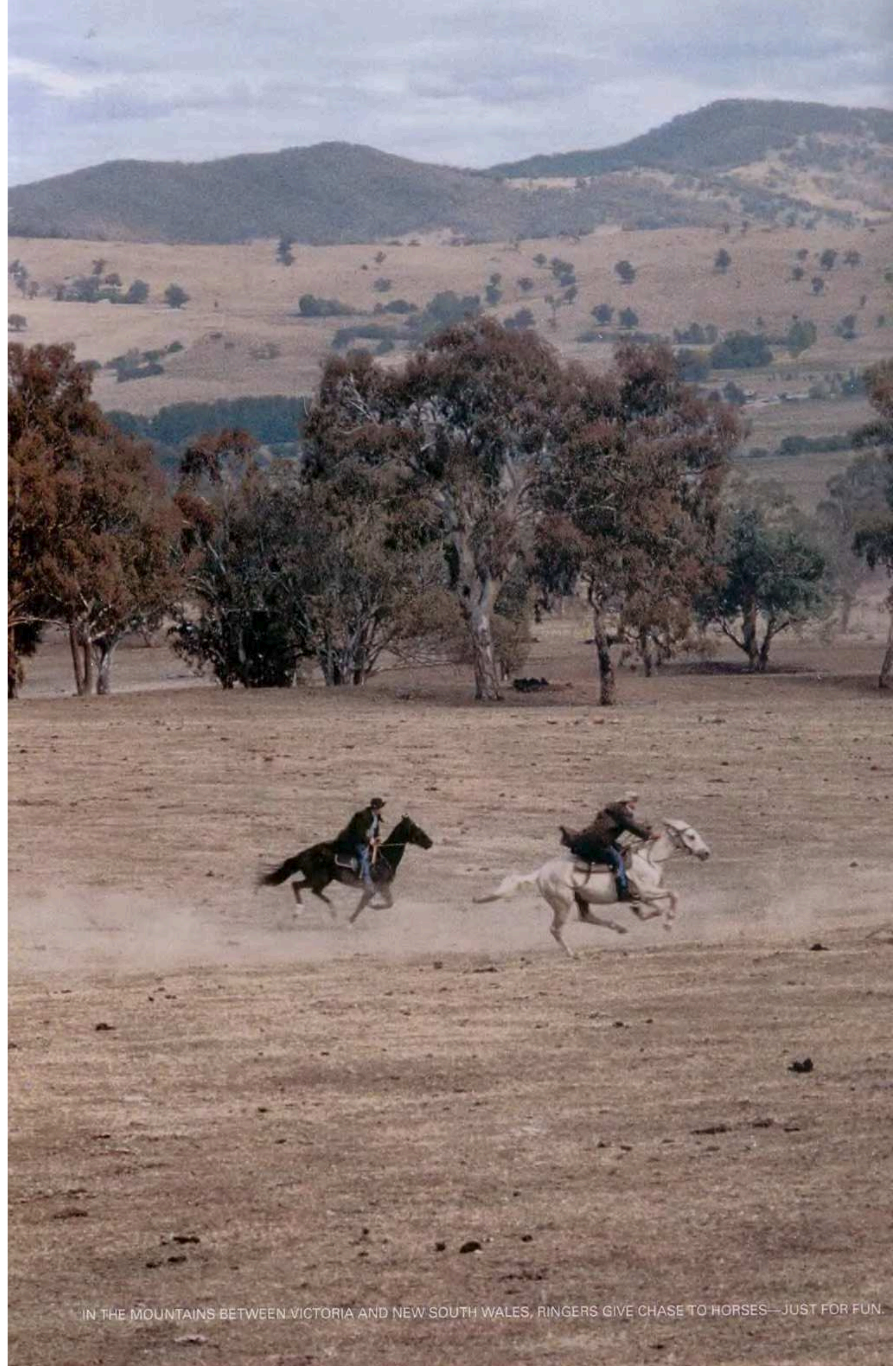
Paterson published the ballad in the April 26, 1890, edition of the *Bulletin*, only four months after "Clancy." It's the tale of a high-spirited pursuit of a valuable racing colt that had joined the wild bush horses, and was written partly in response to an article Paterson had read in an English sporting journal that made the rounding up of wild horses in Australia sound too much like a romp through the gentle English countryside. Paterson showed the world an ancient, gnarled, slab-sided wilderness, deeply carved by snow-fed rivers and dominated by the 7,310-foot mass of Mount Kosciuszko, Australia's highest mountain—a dangerous landscape where "The wild hop scrub grew thickly, and the hidden ground was full / Of wombat holes, and any slip was death."

Popular wisdom around Corryong has it that the poet based his tale on the exploits of a recklessly brave local horseman named Jack Riley, with whom Paterson supposedly shared a campsite one night on a trip in the mountains in 1890. But there were plenty of other claimants as well: Lachie Cochran of Adaminaby, "Hellfire" Jack Clarke of Jindabyne, and an Aboriginal stockman named Toby, to name a few. But nobody aside from tourism promoters and the occasional literary historian really cares, because the eponymous horseman was everybody, a metaphor for how Australia saw itself: a nation of quiet, determined underdogs who would one day surprise the doubters and do great things, and a people who could rise fearlessly to any occasion and never give in, no matter how tough the going. The others might rein up at the mountaintop, terrified of the ground that lay ahead:

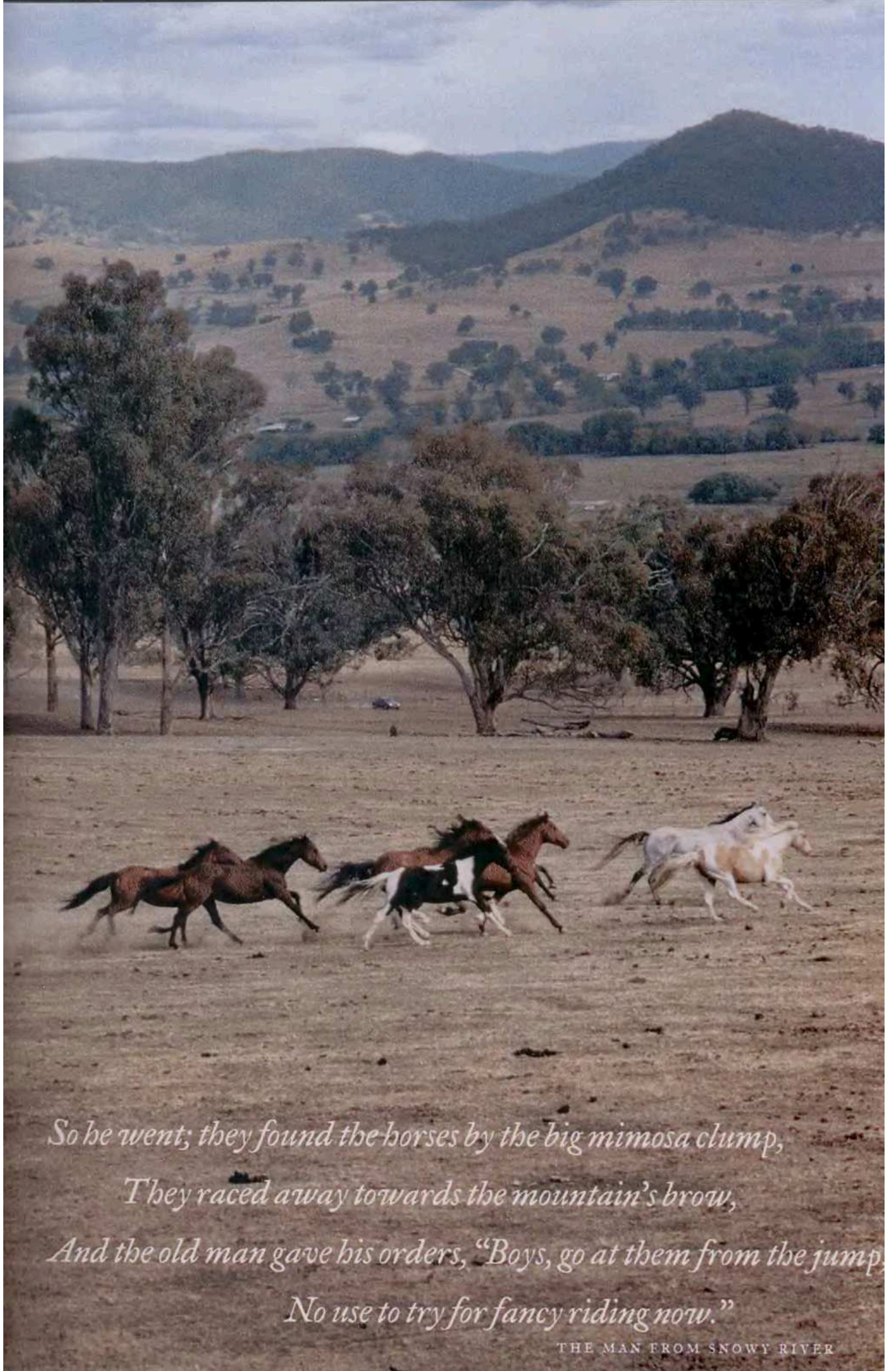
But the man from Snowy River let the pony have his head,
And he swung his stockwhip round and gave a cheer,
And he raced him down the mountain like a torrent down its bed,
While the others stood and watched in very fear.
He sent the flint-stones flying, but the pony kept his feet,
He cleared the fallen timber in his stride,
And the man from Snowy River never shifted in his seat—
It was grand to see that mountain horseman ride.

"It's an exhilarating poem to perform," says Karm Gilespie, a Melbourne-based actor who puts on a one-man stage show of Paterson and his works. "Paterson was a superb horseman himself, and he wrote the ballad in such a way that the words gather pace from a trot to a canter to a full-out gallop so you feel as though you're in the saddle yourself."

Which was what brought me and the hordes of other spectators to Corryong. The town was already bustling when I arrived, hotels and motels full to overflowing, so I



IN THE MOUNTAINS BETWEEN VICTORIA AND NEW SOUTH WALES, RINGERS GIVE CHASE TO HORSES—JUST FOR FUN.


So he went; they found the horses by the big mimosa clump,
They raced away towards the mountain's brow,
And the old man gave his orders, "Boys, go at them from the jump,
No use to try for fancy riding now."
THE MAN FROM SNOWY RIVER

headed out to pitch my tent with the competitors in the eucalyptus scrub around the showground. It was a cheerful, noisy sprawl of a camp, swags rolled out beside utes, tethered horses, barking dogs, clotheslines strung between trees, lean-tos made from tarps, and a cool April night dotted with campfires.

In the easy small-world vernacular of the bush I found myself camped between Peter Cochran, the great-grandson of Lachie Cochran, and Geoff Willis, the winner of the previous year's Modern Man From Snowy River Challenge, a horse-breaker from a small town in New South Wales with the Banjoesque name of Gumly Gumly. "The challenge is a straightforward test of good all-round practical skills," Geoff explained, "the sort of stuff you'd use in everyday life."

I woke in the morning to the sounds of kookaburras hooting in the gums and the pistol-crack snaps of stockwhips as competitors warmed up for the whip-cracking competition. This was no flashy rodeo crowd. The competitors somehow all managed to look the part of the ballad's quiet, mountain-bred horseman, whether they were leathery men in their fifties with walnut complexions and craggy features or clear-eyed kids barely out of adolescence. A handful of these would-be men from Snowy River were women.

The next two days were filled with all manner of riding events, horseshoeing, camp drafting, packhorse loading, and the premier event: catching and taming a wild brumby in under four minutes (less time than it takes to recite the famous ballad). The wild bush horses had been yarded up in the mountains only a couple of days earlier and brought down to the showground, untouched by human hands, and one-by-one they were tamed—not with any fancy rope work or rough handling, just a slipped-on halter, soft words, and an expert knowledge of equine psychology.

The overall winner of the challenge was 27-year-old Jason Leitch, a horse trainer from Scone, New South Wales, and as the crowds and press gathered around him, along with two international film crews and the producers of one of Australia's national TV morning shows, I thought of something Paterson once wrote: "That is the greatest compliment a writer can have, to know that he has written a thing so truly that people not only believe that it happened but that it happened to themselves."

Paterson wrote his biggest international hit while on holiday in outback Queensland in 1895, where he'd come to spend some time with his fiancée, Sarah Riley, and her family, near the town of Winton. Sarah was keen to show off her handsome and successful husband-to-be, and together they rode off to stay with one of her old school chums, Christina Macpherson, whose brother owned the nearby Dagworth Station, a 250,000-acre grazing property. They were a merry enough gathering at first. They went to the races, held dinner parties, and had picnics by the Combo Waterhole, one of the prettier spots on the station.

It was there Paterson learned of the suicide of a shearer on the water hole's edge the previous spring, during a bitter shearers' strike. The sad personal tale, set against the larger backdrop of forlorn working-class defiance (the shearers lost their strike), piqued Paterson's imagination, and he decided to craft a ballad around it: A hungry tramp camped by a water hole kills a sheep to feed himself, only to be caught in the act by the wealthy landowner and three mounted policemen. Faced with arrest and the loss of the open-road freedom he cherishes more than life itself, he dives into the water and drowns himself. Paterson planned to call it "Waltzing Matilda," after the slang term for drifting around the outback on foot with a bedroll—your "matilda"—slung over your shoulder.

Christina Macpherson was an accomplished musician and entertained the group by playing tunes on her Autoharp. One

in particular struck their fancy, a lilting Scottish number called "Thou Bonnie Wood o' Craigielea," to which no one seemed to know any words. Paterson, who was smitten by Christina, had an idea: They could put their heads together and adapt his ideas to the music. So off they went, the handsome solicitor and the pretty songstress, to collaborate in private.

What happened off the score sheet is a little vague. None of the people present at the homestead ever spoke much about it, but the upshot was that Paterson's engagement to Sarah was abruptly broken off, and the two women, hitherto the best of friends, never spoke to each other for the rest of their lives. Banjo was reportedly run off the property by Christina's outraged brother—at gunpoint, according to some versions of the story.

"We don't know if he was actually still up here when the song debuted over at the North Gregory Hotel," says Ian Jempson, the director of the Waltzing Matilda Centre in Winton, a museum dedicated to Australia's national song. "His movements around that time are unclear. What we do know was that Banjo was acutely embarrassed by the whole incident. For the rest of his life 'Waltzing Matilda' was a very sensitive subject with him. He rarely mentioned it."

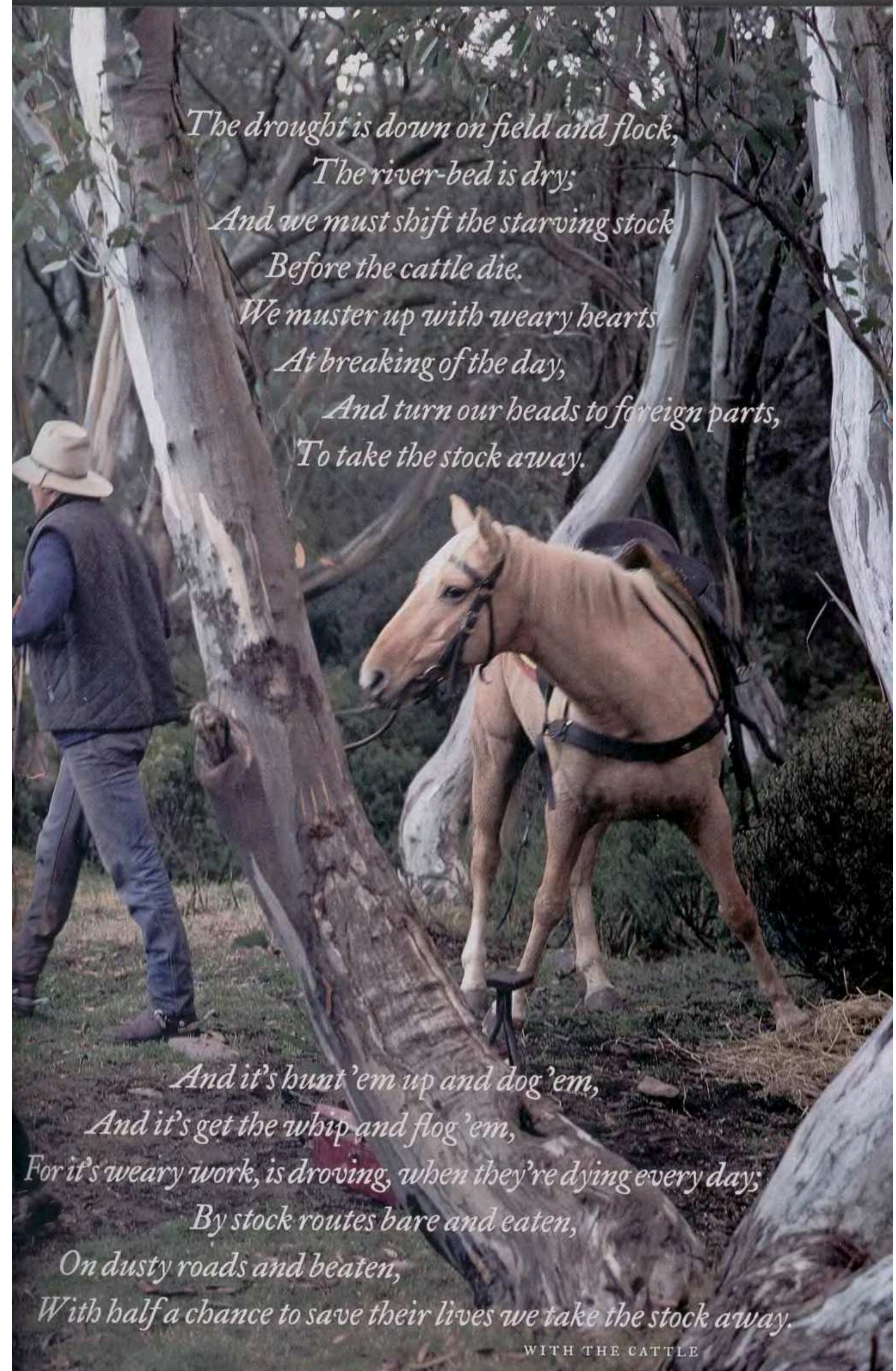
Whether he wanted to claim it or not, he had a hit on his hands. Australia didn't have a national anthem then, and "Waltzing Matilda," with its themes of ornery independence and iconic outback setting, filled the bill perfectly.

The lyrics were so crammed with outback slang that you virtually had to be an Australian to understand them. But that doesn't seem to have slowed its popularity abroad. To date more than 500 versions of the song are known to have been recorded worldwide. Burl Ives, Bill Haley and His Comets, Bon Jovi, Liberace, the Mormon Tabernacle Choir, the Coldstream Guards band, even the Vienna State Opera Orchestra have all had a crack at it. It has been done in blues and heavy metal; in yodeling and steel band arrangements; in Japanese, Swedish, and pidgin in Papua New Guinea. Winston Churchill allegedly sang it to what must have been a bemused Charles de Gaulle at a dinner at Chequers in 1941, proclaiming at the end of it: That is one of the finest songs in the world! —something that millions of Australians had already decided for themselves, although the song lost out to the magisterial "Advance Australia Fair" in a 1977 referendum to determine the country's official national anthem.

"I'm afraid I'm one of those who agree with that decision," Jempson laughed. "Much as I like 'Waltzing Matilda,' I do think we needed something a little more dignified for our national anthem than a charming folk song about a sheep-stealing swagman who commits suicide rather than go to jail."

Popular as "Waltzing Matilda" was, it never made Paterson rich. He sold the rights to it, "along with some other junk," to his publisher for five pounds in 1903. He had done much better eight years earlier with his first book, a collection of 46 of his best ballads called *The Man From Snowy River and Other Verses.* He woke up famous, much in demand in literary and social circles. The London *Times* loftily compared him "not unfavorably" with the empire's other action poet, Rudyard Kipling, and Kipling himself sent a congratulatory letter to Paterson's publishers. "Give my best salutations to Mr. Paterson and tell him to do it again. There can't be too many men in this world singing about what

CATTLEMEN BREAK CAMP AMID SNOW GUMS TO ROUND UP STOCK IN VICTORIA'S HIGH COUNTRY.



The drought is down on field and flock,
The river-bed is dry;
And we must shift the starving stock
Before the cattle die.
We muster up with weary hearts
At breaking of the day,
And turn our heads to foreign parts,
To take the stock away.

And it's hunt 'em up and dog 'em,
And it's get the whip and flog 'em,
For it's weary work, is droving, when they're dying every day;
By stock routes bare and eaten,
On dusty roads and beaten,
With half a chance to save their lives we take the stock away.

WITH THE CATTLE

Kim Osborne and fiancé Chris Stoney, who live near Mansfield, Victoria, run sheep and cattle on 92,000 acres, which sounds romantically Banjoesque. But it's not a life most city folks would enjoy, says Kim. "People like to dream of escapes they won't ever live." What does Chris dream about? "Surfing."

they know and love and want other people to know and love." He found a following in the U.S. too. One notable fan: Theodore Roosevelt, the old Rough Rider himself.

Fame opened doors, allowing him to lead the action man life he'd been dreaming about for years. He took a leave of absence from his practice and spent months up in Australia's wild tropical north, hunting crocodiles and water buffalo, sailing on pearling luggers in the Arafura Sea and writing a series of travel articles for the Eastern & Australian Steamship Company and others. Then he was off to the Boer War, where he made a name for himself as a dashing war correspondent, seeing plenty of action, writing vivid dispatches from the front, and mingling with some of the British Empire's most glittering names: Lord Kitchener, Winston Churchill, and Cecil Rhodes. Next it was China and the Boxer Uprising of 1900. Hostilities were over by the time he arrived, but he filed a series of postcard-style vignettes of life in the Philippines and Shanghai and the Chinese provinces. When heavy winter snows foiled his plan to travel overland to St. Petersburg, he traveled to London by steamer instead, via Suez, visiting with Kipling with whom he'd become friends after they met in South Africa.

Compared with the life of glamour and danger he'd been leading, the law office back on Bond Street was looking very small and dingy indeed, and when he returned to Australia in 1902, he formally quit his day job for good.

"Henceforth I am a journalist," he confided in his diary, and took up duties as editor of Sydney's *Evening News.* In 1903 he married Alice Walker, a grazier's daughter he'd met on the lecture circuit. They settled in Sydney, where he spent much of the rest of his career editing various city newspapers and sporting journals, and covering the horse racing scene for the *Sydney Sportsman.*

With the exception of a four-year retreat to the country, and military service in World War I, when as Major Paterson he helped supervise the training of horses for the troops in the Middle East, he spent the rest of his life living in quiet prosperity in Sydney's fashionable eastern suburbs. He continued to write poetry and published a couple more well-received volumes of verse, but his best work, or at least his best remembered, was long behind him, mostly written before he was 30. Paterson retired from the newspaper business in 1930, was made a Commander of the Order of the British Empire for his services to literature, and seemed a trifle bemused by the impact a handful of his outback ballads—written so long ago—still had on the national psyche.

"Our 'ruined rhymes' are not likely to last long," he wrote in one of his last published essays, a couple of years before his death in 1941. "But if there is any hope at all of survival it comes from the fact that [we] had the advantage of writing in a new country. In all the museums throughout the world one may see plaster casts of the footprints of weird animals, footprints preserved for posterity, not because the animals were particularly good of their sort, but because they had the luck to walk on the lava while it was cooling. There is just a faint hope that something of the sort may happen to us."

It's still a young country, in years if not sophistication. For all its considerable glitz and style, the first thing you notice about Sydney, when you drive back toward the city from the Blue Mountains and see its skyline in the distance, is how tiny it looks compared with the bigness of the bush around it, and how convincingly it all melds together so that it is hard to tell just where the bush ends and the suburbs begin. The bush is ubiquitous, and subtly close at hand, like the microprinted verses of Paterson's on the ten-dollar bill. Sophistication hasn't banished it. You can come face-to-face with it over dinner at one of Sydney's most fashionable restaurants, high above the city. It's not just the Tasmanian myrtlewood parquetry on the floor or the seared carpaccio of kangaroo filet on the menu—look out the window into the light haze above the skyscrapers, and you'll see hundreds of giant native fruit bats, flying foxes, swirling in the corporate glow like so many moths to a candle.

The bush is not always a benign presence—terrifying bushfires whipped up by scorching winds and fueled by the oil in eucalyptus leaves invade the suburbs almost every summer—but it is a uniquely Australian one, always there on the margins, from the low, comfortable outlines of the Blue Mountains to the spicy tang of the native scrub when you catch it just right in a park or garden after a rain, or when you step out of the international terminal at the airport after a long time abroad. It gives an unmistakable stamp of authority: This could only be an Australian city. And that distinctiveness, as Paterson understood so well, brings with it a host of powerful associations, memories, a way of life, that might have nothing to do with living on the land, or drovers, swagmen, or dashing horsemen. It is what makes the 20 million diverse people who live here Australians. It is the canvas on which they paint their dreams. □

BANJO'S "RUINED RHYMES" Hear a recording of "Waltzing Matilda," listen to a selection of Banjo's poems—including "The Man From Snowy River" and "Clancy of The Overflow"—read by an Australian, download free outback wallpaper, and round up a listing of related websites at **nationalgeographic.com/magazine/0408.**

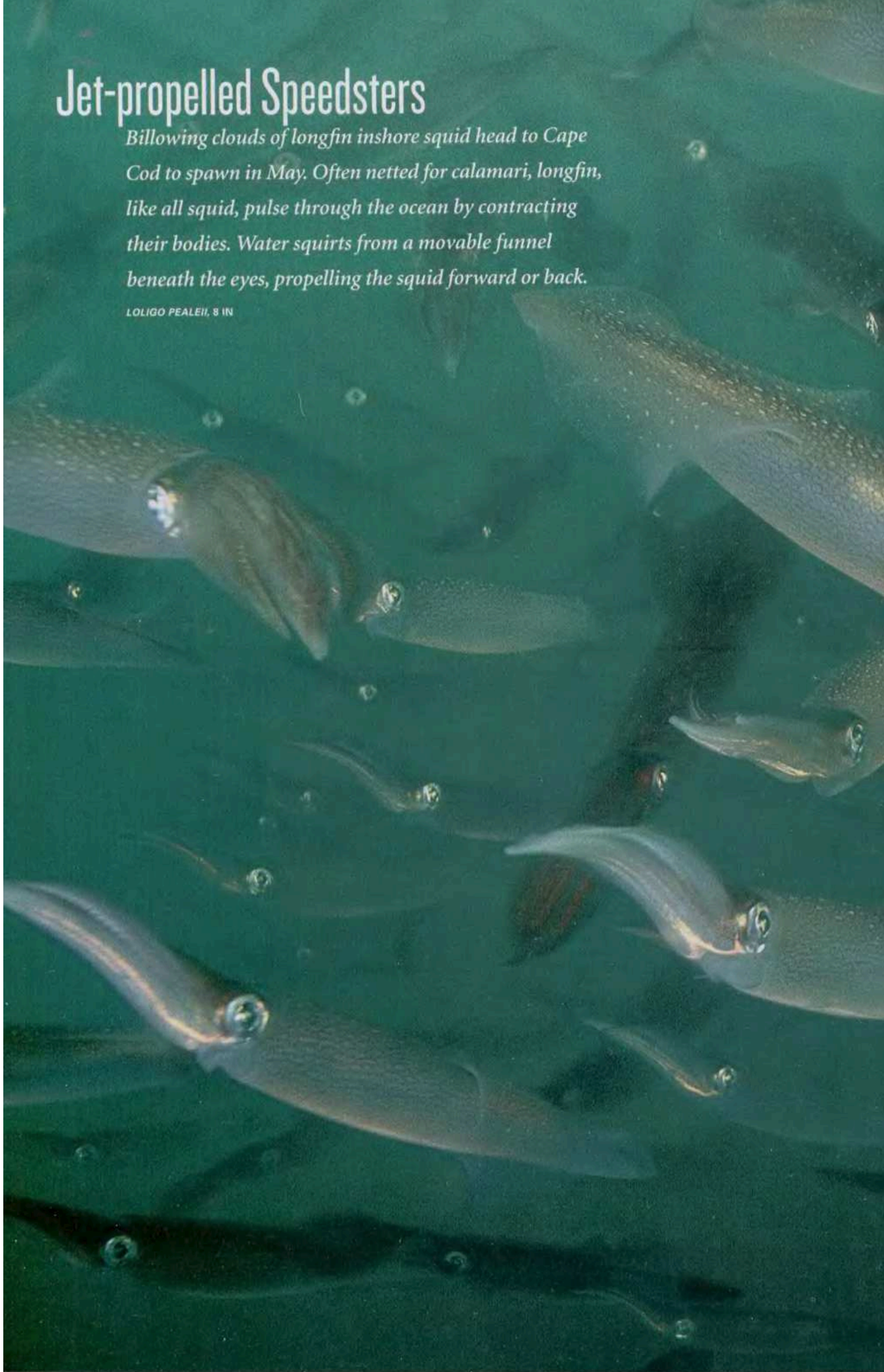
Behind the eerie eyes of a Caribbean reef squid lies high intelligence, for squid and their kin have the largest brains of all invertebrates. Some embody delicate beauty; others conjure sea monsters. All have mastered a great talent: to change their appearance in a flash.

Beautiful and Beastly SQUID

BY ROGER HANLON

PHOTOGRAPHS BY BRIAN SKERRY

SEPIOTEUTHIS SEPIOIDEA, 8 INCHES



Jet-propelled Speedsters

Billowing clouds of longfin inshore squid head to Cape Cod to spawn in May. Often netted for calamari, longfin, like all squid, pulse through the ocean by contracting their bodies. Water squirts from a movable funnel beneath the eyes, propelling the squid forward or back.

LOLIGO PEALEII, 8 IN

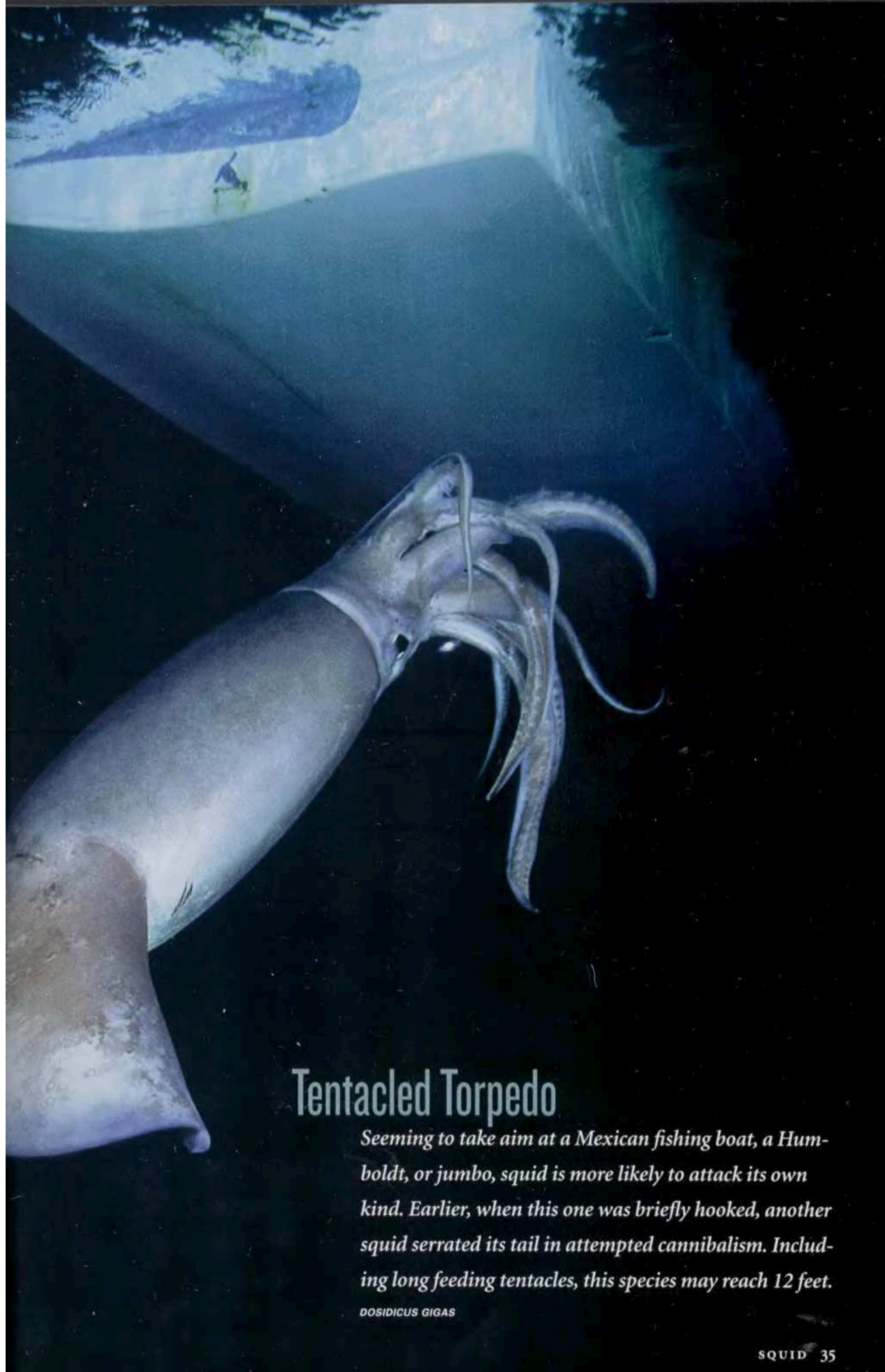
IT WAS A WILD NIGHT in Mexico's Gulf of California. Illuminated by powerful lights from small fishing boats, the water thrashed with squid so big that my jaw dropped in astonishment when I first saw them. Some were as large as a man, with bodies nearly six feet long and weighing 150 pounds. In more than 30 years of studying squid I had never seen any as big as these.

Pulling on diving gear, photographer Brian Skerry and I plunged feet first into this boiling stew of Humboldt, or jumbo, squid. Ranging the eastern Pacific, jumbos are fierce marine predators that will attack anything—from sardines to divers. Even before our entry bubbles cleared in front of our masks, I heard Brian bellow in alarm as a jumbo brushed his arm. In an instant he drew his dive knife and prepared to defend himself, but the big squid had fled.

Mention fearsome squid and people usually think of the giant squid, the elusive sea monster of sailors' tales and television documentaries. But squid families include 280 other species, from the monstrous to the minute in size, ranging all the world's oceans. For nearly four months Brian and I immersed ourselves in their element, diving in waters from Cape Cod to Venezuela to California.

In my work at the Marine Biological Laboratory at Woods Hole, Massachusetts, I study not only squid but the class of mollusks they belong to—cephalopods, which includes octopuses, cuttlefish, and nautiluses. Squid are known by their eight arms and two long feeding tentacles. They also have sharp, parrot-like beaks and three hearts—a central heart plus two more that pump blood through the gills.

The cephalopods are an ancient clan, dating as far back as the late Cambrian period, half a billion years ago. They are classified as mollusks, but those of us who are fascinated by these creatures sometimes wonder. With their agility, sophisticated senses, and extraordinary ability to instantly alter their skin's color pattern, squid and their kin are far more advanced than the average clam or oyster.



Tentacled Torpedo

Seeming to take aim at a Mexican fishing boat, a Humboldt, or jumbo, squid is more likely to attack its own kind. Earlier, when this one was briefly hooked, another squid serrated its tail in attempted cannibalism. Including long feeding tentacles, this species may reach 12 feet.

DOSIDICUS GIGAS

Skin Sorcerers

The most versatile skin in nature helps squid ambush prey, avoid predators, court mates, challenge rivals, and signal one another. During courtship a male Caribbean reef squid splits into two patterns (right), orienting its coppery right side toward a female it has paired with, and flashing its silvery left side to ward off rival males. Squid skin is peppered with chromatophores, sacs of pigment attached to tiny muscles. To vary its color, the squid can expand a few chromatophores (below) or many (center), or retract most (far right). The green and blue iridescence underneath the chromatophores is caused by skin cells that reflect light, adding to the squid's range of colors for camouflage and signaling.

SKIN MAGNIFIED 5 TIMES

SEPIOTEUTHIS SEPIOIDEA

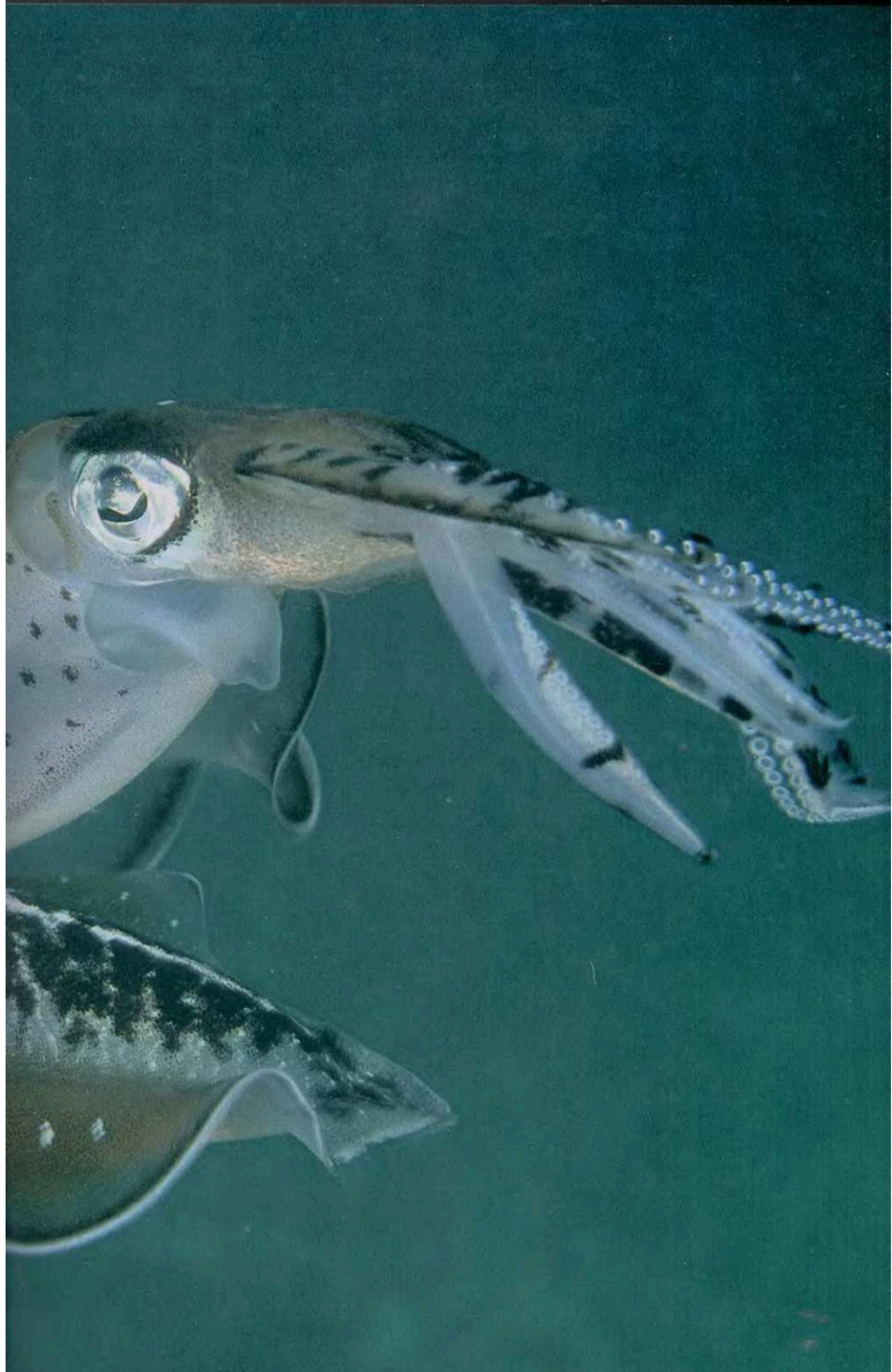
3 X

3 X

Dressed for Battle

Flashing an aggressive zebra pattern that shouts "Back off!" to a male rival, a Caribbean reef squid, at bottom, defends its claim to a nearby female. This flamboyant species has about 35 patterns in its wardrobe, several of which it uses during courtship.

SEPIOTEUTHIS SEPIOIDEA



Live Fast, Die Young

Because most squid live for only a year or so, they must reproduce quickly. Different species choose different tactics. Off California the opalescent inshore squid takes the mass production approach. A red-armed male embraces a female after mating (right). She will lay more than 50,000 eggs in hundreds of fingerlike egg cases. Within weeks both adults die, becoming food for scavengers such as bat stars (far right). By contrast, a female Caribbean reef squid deposits only three or four eggs per case, then carefully hides them—here amid stinging fire coral (right). After about three weeks an embryo has fully functional eyes (center) and will hatch in perhaps five more days.

SEPIOTEUTHIS SEP

LOLIGO OPALESCENS, 7 IN

SEPIOTEUTHIS SEPIOIDEA EMBRYO, 10 X

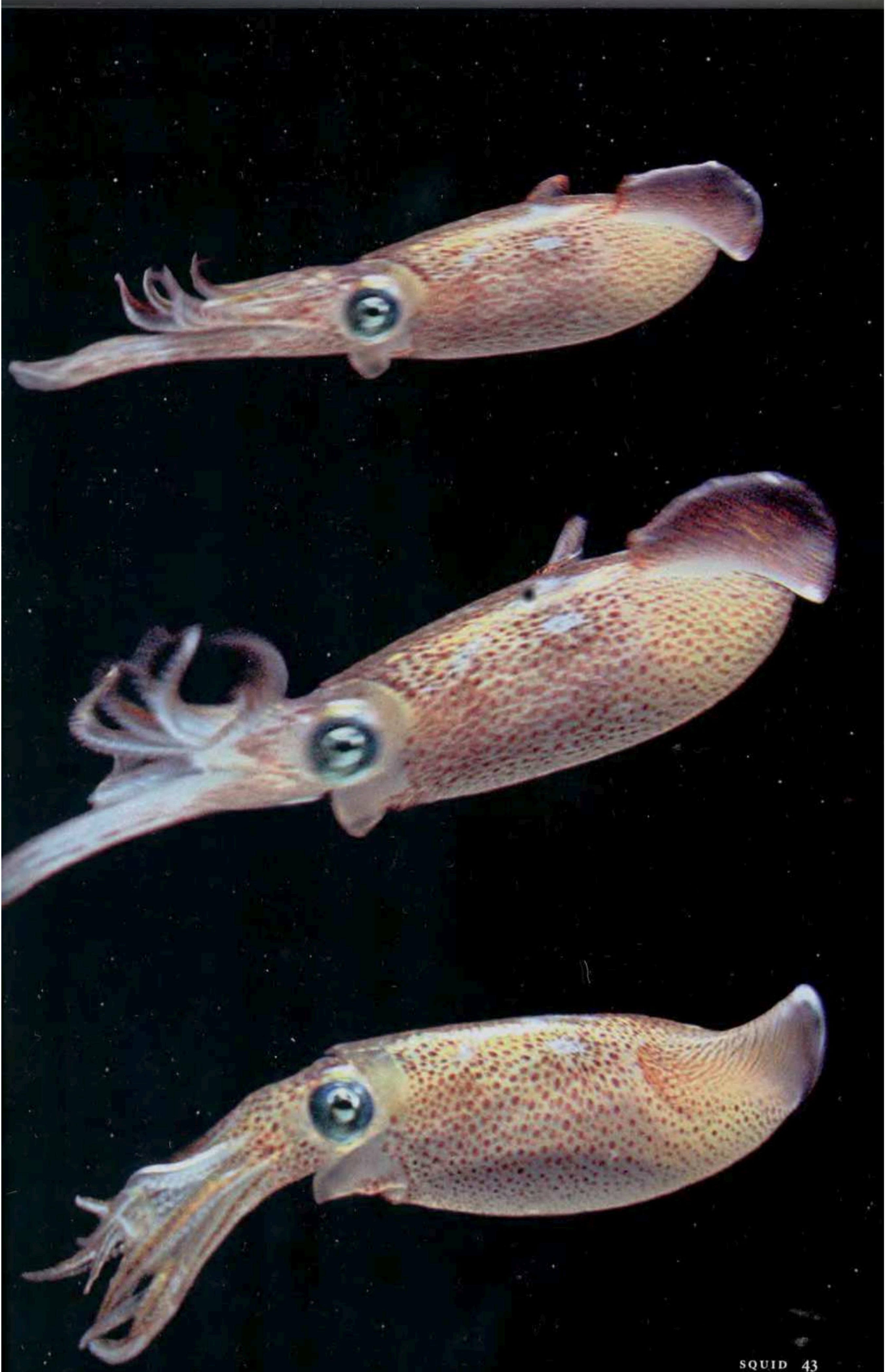
BAT STAR: *ASTERINA MINIATA*, 6 IN

Quick Meals for One

What chance does a shrimp or small fish have of escaping the whiplike, sucker-studded feeding tentacles of a squid? Slim to none. University of North Carolina biologist William M. Kier found that squid can snap out their tentacles in about 20 milliseconds—a speed nearly invisible to the human eye. Using a high-definition television camera in a lab, Brian Skerry caught this Atlantic brief squid in action. The squid's eight arms and two longer feeding tentacles close in on a shrimp (top right). In a blur, the tentacles make a four-inch strike (middle). Grasping its prey, the squid's arms pull it toward its mouth (bottom), where its beak will tear the shrimp apart. Small fish are just as welcome (above).

LOLLIGUNCULA BREVIS, 5 IN; HDTV IMAGES BY BRIAN SKERRY AND D. J. ROLLER, NATIONAL RESOURCE CENTER FOR CEPHALOPODS, GALVESTON, TEXAS

SEE IT IN MOTION Watch video of this squid snapping up prey, and see more images snapped by Brian Skerry at **nationalgeographic.com/magazine/0408.**



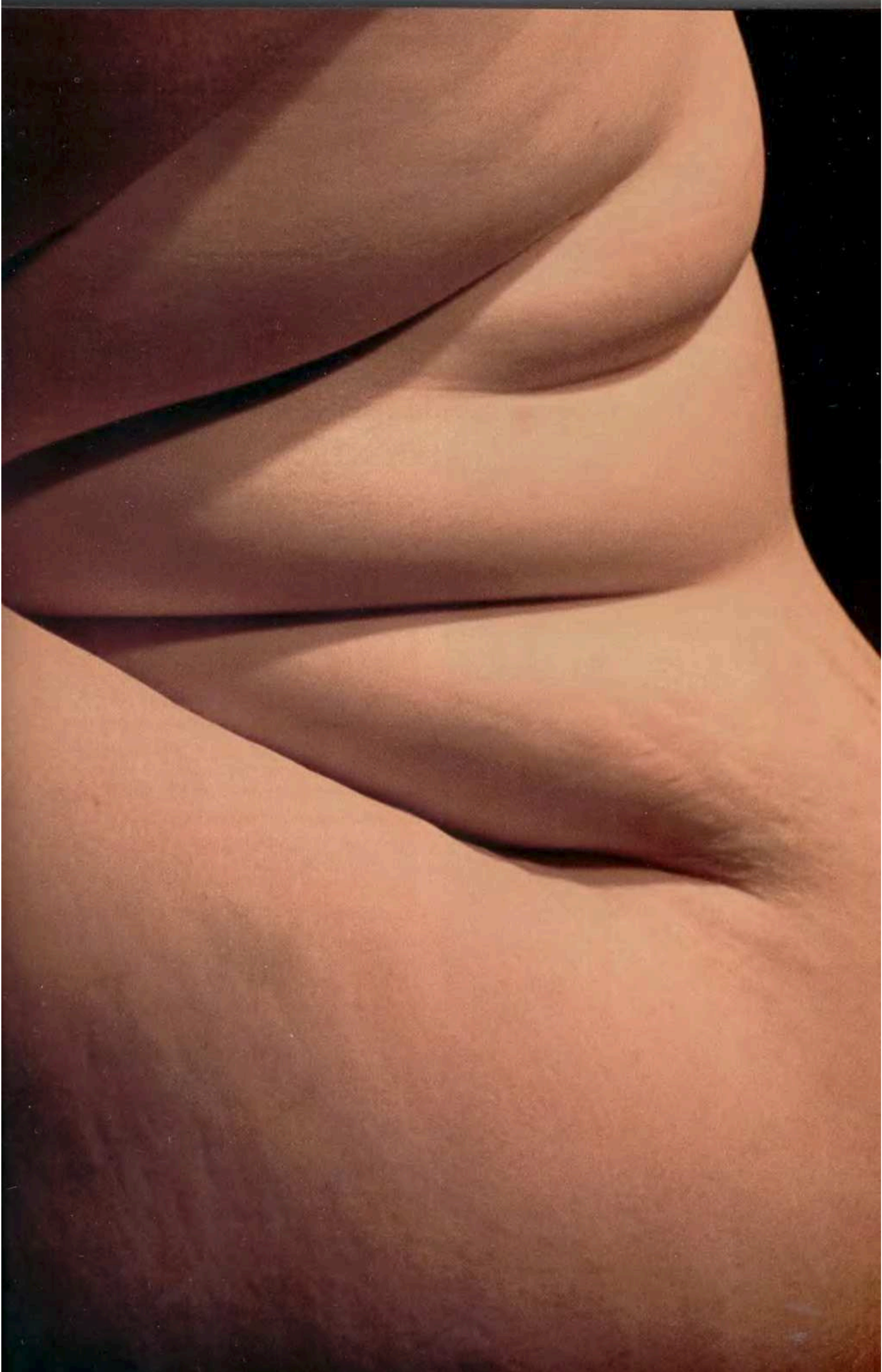
Devils From the Deep

"Diablos rojos"—red devils—Mexican fishermen call aggressive jumbo squid, which often spew water from their funnels as fishermen haul them aboard (below). With angry eye and a cloud of ink, a jumbo flees from a diver (right). If camouflage fails, squid use ink as a backup defense—another in their bottomless bag of tricks. □

DOSIDICUS GIGAS (BOTH)

WHY ARE WE SO fat?

Americans enjoy one of the most luxurious lifestyles on Earth: Our food is plentiful. Our work is automated. Our leisure is effortless. And it's killing us.



BY CATHY NEWMAN
NATIONAL GEOGRAPHIC SENIOR WRITER

PHOTOGRAPHS BY KAREN KASMAUSKI

Finally, after two decades of trying and failing to lose weight with (you name it) Weight Watchers, Nutri-System, a nutritionist, a personal trainer—not to mention the therapist who derided her for being fat—it has come down to this: Linda Hay is sitting in an examining room at the Virginia Commonwealth University Medical Center in Richmond with Harvey Sugerman, the surgeon who will perform a gastric bypass operation on her in two weeks.

Gastric bypass is major surgery that shrinks the stomach's capacity from wine bottle to shot-glass size and reconfigures the small intestine. Most patients lose about two-thirds of their excess weight within a year of surgery. "Gastric bypass surgery is a tool," Sugerman says. "It reduces the stomach. The patient can't eat as much. In most instances, if a bypass patient eats sugar or fatty foods, it provokes a dumping syndrome that causes flushing, nausea, sweating." You could say it's almost like Antabuse for the obese. Even so, the operation fails in 15 percent of cases. Some patients can subvert the surgery. They overeat by snacking continuously.

And the surgery is risky. The list of possible complications includes blood clots in the lung, pneumonia, infection, leakage from the reshaped intestinal tract, and—in one out of a hundred cases—death.

Hay, 39, is five feet five and weighs 314 pounds; she is morbidly obese, which makes her a candidate for the surgery. Her managerial level job in the human resources department of a financial company demands tact, efficiency, and organization—qualities she exudes. She has a close circle of friends who would do anything for her, a clear sense of who she is, and few illusions of who she is not. She dresses stylishly, has long blond hair swept back by a headband, a classic oval face, and fair complexion. But she is—let's face it—huge.

When I ask about her decision to have surgery, she describes the humiliation of asking for a seat-belt extender on a plane; her reluctance to go to movies because the seats are too narrow; the time she signed up for a dating service, put down as body type "a few extra pounds," got a few responses, and then, opting for honesty, changed it to "large." This time she got none. She lists health problems associated with her weight: high blood pressure, varicose veins, pain and swelling in her feet and ankles, depression. "You take control for a while," she says, "then you fail yet again, and you're more depressed than ever."

Linda Hay has considered the risks and decided to have surgery. Nonetheless she is anxious. "No one at the office knows I'm going to do this," she confesses. "Someone said, 'Have a good week,' and my mind kept racing to the worst-case scenario . . . What if?"

It seems, I say, turning to Sugerman, that this is surgery for the desperate.

He nods. "Surgery is a drastic solution," he says, "but then obesity is a drastic problem."

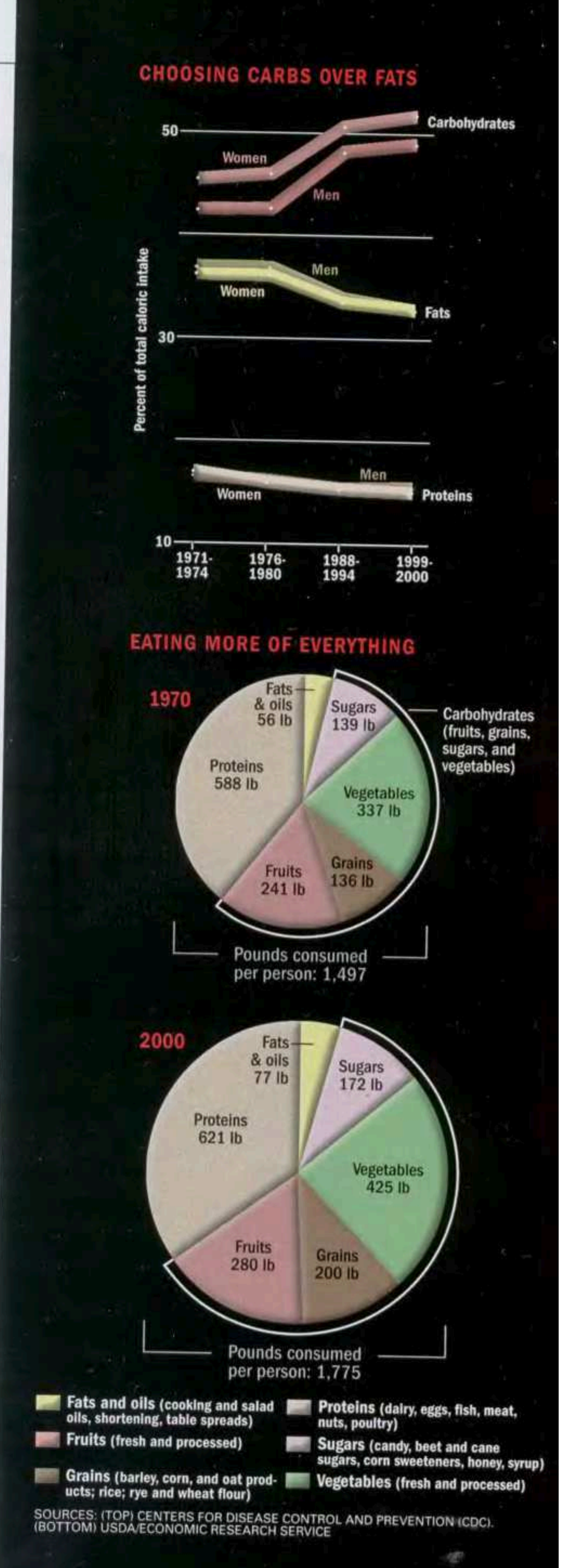
It's become a far too familiar headline: Today one out of three Americans is obese, twice as many as three decades ago, and enough for the Centers for Disease Control and Prevention to declare obesity an epidemic. More disturbing are statistics relating to children: 15 percent of children and teens are overweight, a nearly threefold jump from 1980. Obesity is defined by your

USA: OVERFED NATION

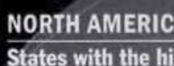
For all the Americans who've blamed bulging bellies on a slow metabolism, the jig is up. A report earlier this year by the Centers for Disease Control and Prevention finally confirms what many of us didn't want to admit: We're fat because we eat a lot—a whole lot more than we used to—and most of the increase comes from carbohydrates. Adult women are now eating 335 more calories per day than they did in 1971, while adult men have upped their daily intake by 168 calories.

We're talking excess pounds here—on our bodies and on our plates. We each ate 1,775 pounds of food in 2000, up from 1,497 pounds in 1970. At first glance, some of the increase looks good. We're eating more vegetables, just like the USDA's Food Guide Pyramid, issued in 1992, advised. The only problem: Almost a third of these vegetables were iceberg lettuce, french fries, and potato chips. And while we've outdone ourselves in getting even more servings of "grains" than recommended, that doesn't mean we've grown fond of bulgur and millet. The grains we're eating are flour-based items like pasta, tortillas, and hamburger buns, which have little more nutritional value than table sugar. Even the reduction of fat as a percentage of total calories isn't real progress. The only reason the percentage is down is that we're eating so much more of everything else.

Does the report prove the case of carb-avoiding devotees of the Atkins and South Beach diets? It certainly doesn't contradict it, says Harvard epidemiologist Meir Stampfer. But he emphasizes that added sugars and processed carbs, not high-fiber carbs like whole grains, are the real culprits. The food pyramid guidelines told Americans to avoid fat and eat grains, so we loaded up on pasta and bread, says Stampfer. "The low-fat message backfired."



SOURCES: (TOP) CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC). (BOTTOM) USDA/ECONOMIC RESEARCH SERVICE



NORTH AMERICA

States with the highest obesity rates—Mississippi and Alabama—are in the South. The more affluent and outdoorsy western states of Colorado and Utah have the lowest rates.

SOUTH AMERICA

As Latin America becomes more developed, supermarkets stocked with processed foods have become the norm, rising from 20 percent of food retail during the 1980s to 60 percent in 2000.

a widening PROBLEM

In a historical first, there are now as many overnourished people as undernourished around the world. Here's the recipe for obesity on such a global scale: Take technology—cars, washing machines, elevators—that reduces physical exertion. Increase calorie consumption, courtesy of increasing prosperity. Add television and video games. Stir in the intensive marketing of candy and fast food, and you have the makings of an epidemic. In countries where the food supply has been unstable, people are getting fat despite far less abundance than in the United States. The implication? Newly industrialized nations in Asia, Africa, the Caribbean, and Latin America may develop even higher rates of obesity-related health problems than in the U.S.

SOURCES: DEMOGRAPHIC AND HEALTH SURVEY ANALYSIS, BARRY POPKIN AND CARLOS MONTEIRO; WORLD HEALTH ORGANIZATION GLOBAL DATABASE ON BODY MASS INDEX
NATIONAL GEOGRAPHIC MAPS

EUROPE

Candy, fast food, and sweetened cereals account for more than half the food ads in ten European Union nations. In the U.K. snack food consumption rose nearly 25 percent in five years.

AFRICA

In some parts of Africa obesity afflicts more children than malnutrition. In Tunisia the urban population is shifting from traditional healthy whole grain breads to white bread.

ASIA

In Shanghai, roads once filled with pedestrians and cyclists are now congested with cars. KFC opened a drive-through restaurant in Beijing in 2002, with more to come.

OCEANIA

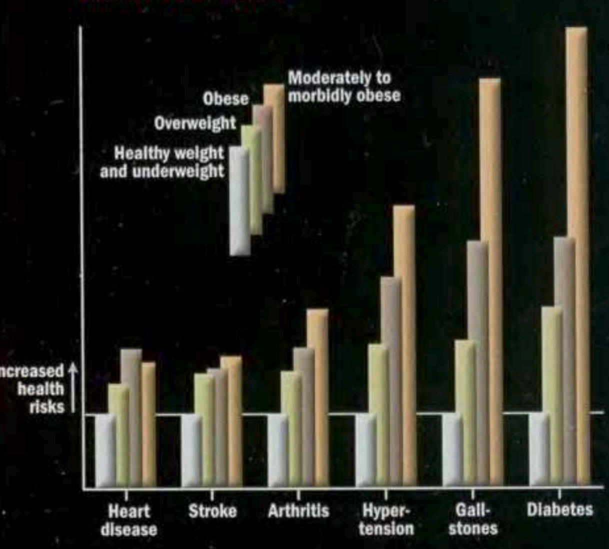
Pacific islanders have always valued hefty physiques. Now their shift away from local foods to a high-fat, Western diet has made them among the world's fattest people.

FIND YOUR BODY MASS INDEX

Height in feet and inches \ Weight in pounds	120	130	140	150	160	170	180	190	200	210	220	230	240	250
4'6"	29	31	34	36	39	41	43	46	48	51	53	56	58	60
4'8"	27	29	31	34	36	38	40	43	45	47	49	52	54	56
4'10"	25	27	29	31	34	36	38	40	42	44	46	48	50	52
5'0"	23	25	27	29	31	33	35	37	39	41	43	45	47	49
5'2"	22	24	26	27	29	31	33	35	37	38	40	42	44	46
5'4"	21	22	24	26	28	29	31	33	34	36	38	40	41	43
5'6"	19	21	23	24	26	27	29	31	32	34	36	37	39	40
5'8"	18	20	21	23	24	26	27	29	30	32	34	35	37	38
5'10"	17	19	20	22	23	24	26	27	29	30	32	33	35	36
6'0"	16	18	19	20	22	23	24	26	27	28	30	31	33	34
6'2"	15	17	18	19	21	22	23	24	26	27	28	30	31	32
6'4"	15	16	17	18	20	21	22	23	24	26	27	28	29	30
6'6"	14	15	16	17	19	20	21	22	23	24	25	27	28	29
6'8"	13	14	15	17	18	19	20	21	22	23	24	25	26	28

Obesity is defined in terms of body mass index, or BMI, a measure of body weight relative to height. A person with a BMI of 30 or more is considered obese—and at a higher risk of diseases ranging from head (stroke) to toe (diabetic foot ulcers). From 1971 to 2000 obesity increased from 14.5 percent to 30.9 percent of the U.S. population, setting the stage for soaring rates of diabetes. Obesity-related diseases cost the U.S. more than 100 billion dollars annually. Next year, being overweight is predicted to surpass smoking as the leading cause of preventable death in the country.

CHART YOUR RISK



SOURCE: THE LEWIN GROUP ANALYSIS OF CDC DATA

body mass index, or BMI, a fancy calculation in which your weight is divided by your height. (You can find yours by consulting the chart at left.) If it's 25, you're overweight. If it's 30, you're obese. Over 40, you're morbidly obese.

The broadening of America is everywhere you look, or sit. The Puget Sound ferries in Washington have increased the width of their seats from 18 to 20 inches to allow squeeze-in room for people with bigger bottoms. In Colorado an ambulance company has retrofitted its vehicles with a winch and a plus-size compartment to handle patients weighing up to half a ton. Even the Final Resting Place has had to accommodate our growing girth. An Indiana manufacturer of caskets now offers a double-oversize model—38 inches wide, compared with a standard 24 inches.

Being overweight is associated with 400,000 deaths a year and an increased risk of heart disease, type 2 diabetes, and colon, breast, and endometrial cancers. Most poignant is the psychological pain of those stigmatized by obesity. In one study at Michigan State University, undergraduates said they would be more inclined to marry an embezzler or cocaine user than an obese person.

How did Americans get so fat? Where did we go wrong? It depends on who you ask. I asked Robert Atkins last year, a month before the purveyor of today's hottest diet died from a head injury suffered in a fall. He sat in guru-like serenity behind a black leather-top desk in his Manhattan office. His expression remained impassive, with an occasional lapse into wryness. He seemed to float, as if hovering above the storm of contention his diet provokes.

"We went wrong by allowing the American Medical Association and the United States Department of Agriculture to say: 'You've got to go on a low-fat diet.' They failed to take into account that when people do that, they increase their carbohydrates."

For breakfast that morning, Atkins (who said he was six feet tall, 189 pounds) had eaten a sausage-and-cheese omelet, two ounces of tomato juice, and tea without sugar. His wonderland diet books say yes to bacon, eggs, and lobster dripping with butter and tell readers to lay off the bread and fruit. Slashing carbohydrates and sticking to protein and fat, Atkins claimed, prompts the body to burn fat through

a metabolic process known as ketosis. Another purported advantage: Remaining in near ketosis makes it easier for people to control hunger.

In the post-Atkins era, pork rinds have become a snack sensation, egg consumption has risen, and "doing Atkins" is now synonymous with adhering to a high-protein, low-carb diet. Since 1972 his *Diet Revolution* and the updated version published in 1992 have sold 18 million copies. The latest edition has been translated into 25 languages. But not, as yet, in Italian. "They didn't want to give up their pasta," he said.

To be sure, Americans are filling up on carbohydrates like pasta, potatoes, and bread. In the early '70s we ate 136 pounds of flour and cereal products per capita, and now it's 200 pounds. Most of those products are highly processed grains, like white bread, that are low in fiber and absorbed into the bloodstream more quickly than high-fiber whole grains. Such foods have a high glycemic index, which means they prompt a sharp spike in glucose and trigger a corresponding spike in insulin production from the pancreas. Atkins and other advocates of low-carbohydrate diets claim that surges in insulin cause blood sugar to plummet, which in turn creates cravings for more carbs—and on and on in a spiraling raise-you-one war between glucose and insulin. The trouble is, research doesn't back that up: Low blood sugar hasn't been directly linked to hunger. And unless you have diabetes, blood sugar remains generally stable anyway.

Not everyone has converted to the Atkins gospel. Dean Ornish, director of the Preventive Medicine Research Institute in Sausalito, California, is one of the original advocates of a low-fat diet as a way to lower heart disease risk. He contends that following Atkins's diet might help you lose weight in the short run, but at the cost of "mortgaging your health." He cites an increased risk of breast cancer, prostate cancer, and heart disease, not to mention headaches, constipation, and even bad breath as the price you pay for the Atkins diet.

"Atkins is right about us eating too many simple carbohydrates," he says. But Ornish argues the solution is to replace them with complex carbohydrates like whole grains and vegetables, not more fat. "Atkins gets into trouble when he says to eat bacon and go into ketosis. It's a toxic state. Look, I'd love to tell people it's OK to eat bacon and sausage, but it's not. You can lose weight in ways that aren't good for you. Smoking causes you to lose weight, as do amphetamines. But it's not just about losing weight, it's losing weight in a way that is helpful. There are no long-term studies to support this diet."

As a closing question for Atkins, I had asked him how he wanted to be remembered. "As a person who changed mainstream medicine's approach," he replied. "I hope I live long enough to see that." A month after his death, the *New England Journal of Medicine* reported that in the short run, people on the Atkins diet did lose more weight than those on a low-fat diet, and there was no real difference in cholesterol between the two groups. The catch: Those on Atkins started regaining weight after six months, and by year's end were on par with the comparison group. The jury is still out on the diet's long-term effects, but the National Institutes of Health is funding a five-year study that may render a verdict.

"I want to know why Atkins didn't have himself autopsied, so we could see for ourselves what his coronary arteries looked like," one nutrition expert hissed.

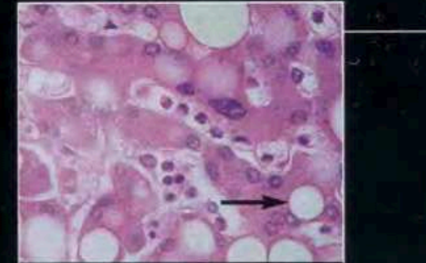
Even so, not even Atkins's death has silenced the critics. "I want to know why he didn't have himself autopsied, so we could see for ourselves what his coronary arteries looked like," one nutrition expert hissed when I broached the subject of Atkins's death. "That's what a real scientist would have done."

If even the experts can't agree which diet is best, who are we supposed to believe?

"Me, of course," says Marion Nestle, professor of nutrition, food studies, and public health at New York University. "Beyond that, how about using some common sense? It's a simple matter of eating fewer calories. But nobody wants to talk about calories because doing so does not sell books." She's right. The government recommends 1,600 calories a day for the average sedentary woman and 2,200 for men. In 2000

THE trouble WITH FAT

To get an inside look at how fat affects the body's organs, we asked two women—one morbidly obese, the other a healthy weight—to spend five hours under a state-of-the-art open scanner to get a high-resolution magnetic resonance imaging scan (MRI). Open scanners—as opposed to the more common enclosed MRI tubes—are in demand as patients get larger.



MICROGRAPH: FAT GLOBULES IN LIVER TISSUE

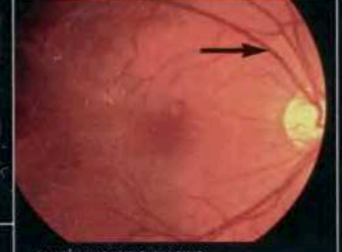
LIVER DISEASE

Many obese people develop deposits of fat inside the liver, a condition that can progress to cirrhosis in about 10 percent of cases, and occasion-

MAGNETIC RESONANCE ANGIOGRAM OF A STROKE

STROKE

The risk of having a stroke is two to four times higher in people with type 2 diabetes, 90 percent of whom are overweight. Stroke occurs either when a blood vessel ruptures or a blood clot blocks an artery to the brain, causing damage to nerve cells.



OPHTHALMOLOGIC IMAGING: DAMAGED BLOOD VESSELS IN EYE

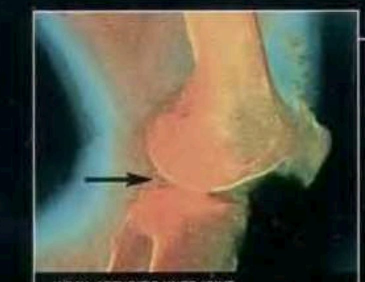
TYPE 2 DIABETES

People with excess body fat—especially in the abdominal area—often become resistant to insulin, a substance that helps the body store glucose. When glucose levels soar, diabetes results. One side effect is damage to blood vessels in the retina, which can lead to blindness.

X-RAY: COLON CONSTRICTED FROM CANCER

COLON CANCER

Obese people are at greater risk of colon cancer. Abdominal fat appears to increase risk more than fat elsewhere, which may explain why men (who tend to store fat in their abdomens) have a higher risk.



X-RAY: ARTHRITIC KNEE JOINT

OSTEOARTHRITIS

Being overweight places additional strain on the spine, hip, and knee joints, causing a loss of cartilage. As the cartilage deteriorates, joint space narrows and bones grind together.

Age: 40
Weight: 250 lbs
Height: 5' 6"
Body Mass Index: 40.3

MICROGRAPH: PLAQUE BUILDUP IN ARTERY

HEART DISEASE

Obese people tend to have elevated cholesterol, which can lead to plaque buildup in the arteries. They are twice as likely to have hypertension.

Age: 36
Weight: 120 lbs
Height: 5' 5"
Body Mass Index: 20.0

DIGITAL COMPOSITE AND COLORATION BY MARTY CHOBOT. MAGNETIC RESONANCE IMAGING (MRI) BY GE MEDICAL SYSTEMS AND ST. LUKE'S-ROOSEVELT HOSPITAL CENTER. CONSULTANTS: STEVE HEYMSFIELD AND WEI SHEN, OBESITY RESEARCH CENTER, ST. LUKE'S–ROOSEVELT HOSPITAL CENTER. IMAGES CLOCKWISE FROM BOTTOM LEFT: SCIENCE PHOTO LIBRARY/CUSTOM MEDICAL STOCK PHOTO (CMSP); BIOPHOTO ASSOCIATES/PHOTO RESEARCHERS, INC.; A. G. DIGIOVANNA, SALISBURY UNIVERSITY (MARYLAND); ZEPHYR/PHOTO RESEARCHERS, INC.; WESTERN OPHTHALMIC HOSPITAL/PHOTO RESEARCHERS, INC.; BSIP/CMSP

our reported per capita daily calorie consumption was 1,877 for women and 2,618 for men—roughly 300 calories more than we need.

So in one sense, the obesity crisis is the result of simple math. It's a calories in, calories out calculation. The First Law of Fat says that anything you eat beyond your immediate need for energy, from avocados to ziti, converts to fat. "A calorie is a calorie is a calorie," says Lawrence Cheskin, director of the Johns Hopkins Weight Management Center, whether it comes from fat, protein, or carbohydrate. Cheskin, who is six foot one and weighs 160 pounds, has never had a weight problem himself. "Who said life is fair?" he observes.

The Second Law of Fat: The line between being in and out of energy balance is slight. Suppose you consume a mere 5 percent over a 2,000-calorie-a-day average. "That's just one hundred calories; it's a glass of apple juice," says Rudolph Leibel, head of molecular genetics at Columbia University College of Physicians and Surgeons. "But those few extra calories can mean a huge weight gain." Since one pound of body weight is roughly equivalent to 3,500 calories, that glass of juice adds up to an extra 10 pounds over a year. Alternatively, you'd gain 10 pounds if, due to a more sedentary lifestyle—driving instead of walking, taking the escalator instead of the stairs—you started burning 100 fewer calories a day.

"We know people get fat by overeating slightly more than they burn, but we don't know why they do it," Leibel says. "I'm convinced our overeating is not willful or the result of a deranged upbringing. It's the genes talking, but it's a very complicated language. Genetics are everything."

In the 1960s James V. Neel, a geneticist at the University of Michigan, listened in on one genetic conversation. In his "thrifty gene" hypothesis, Neel suggested that some of us inherited genes that make us exceptionally efficient in our intake and use of calories. Our bodies are good at converting food into fat and then hanging on to it. This trait may have helped our ancestors survive when calories were few and far between, Neel speculated.

But fast-forward to the 21st century, when calorie supply isn't a problem, and genes that favor gaining weight have outlived their usefulness. Evolution betrays us. We store fat for the

HOW WE BECAME SO SEDENTARY

Percent of Americans
100
80
60
40
20
0
1960
1980
2000
Drive to work
Take public transportation to work
Walk to work

ADDING UP AN EPIDEMIC

Percentage of Americans who were obese in 1971: 14.5 Percentage today: 30.9

Percentage of overweight Americans who say they are "underweight" or "about right": 41

Number of deaths per year associated with being overweight: 400,000

Number of Americans with diabetes in 1980: 5.8 million Number in 2002: 13.3 million

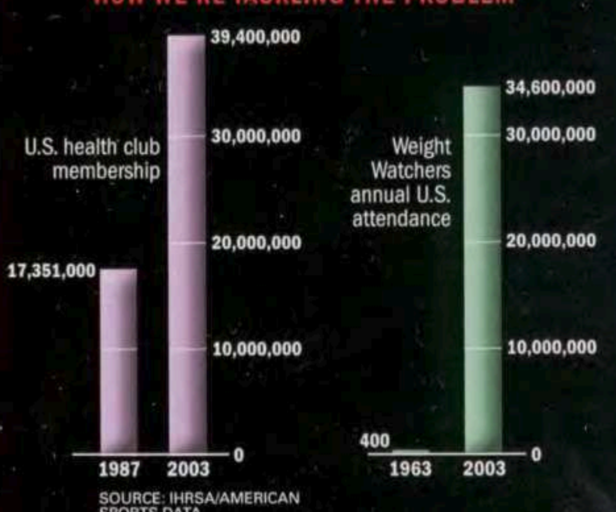
Percentage of high school students who participated in P.E. classes in 1991: 42 Percentage in 2001: 32

Percentage of children ages 12 to 19 who were overweight in 1980: 5 Percentage today: 15

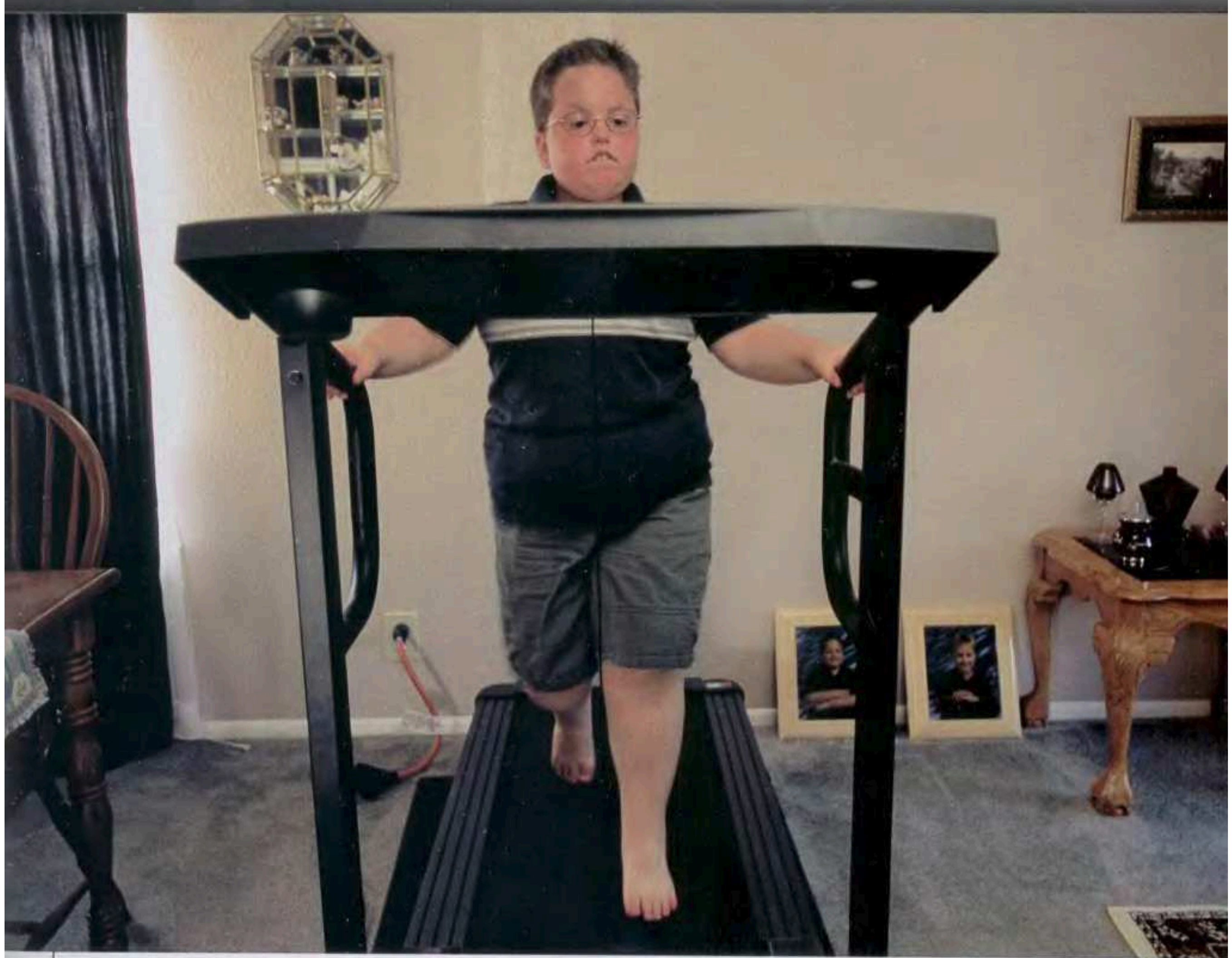
Teaspoons of added sugars Americans are advised not to exceed daily: 10 Number they actually consume: 20

Average women's dress size in 1950: 8 In 2002: 14

HOW WE'RE TACKLING THE PROBLEM



SOURCE: IHRSA/AMERICAN SPORTS DATA

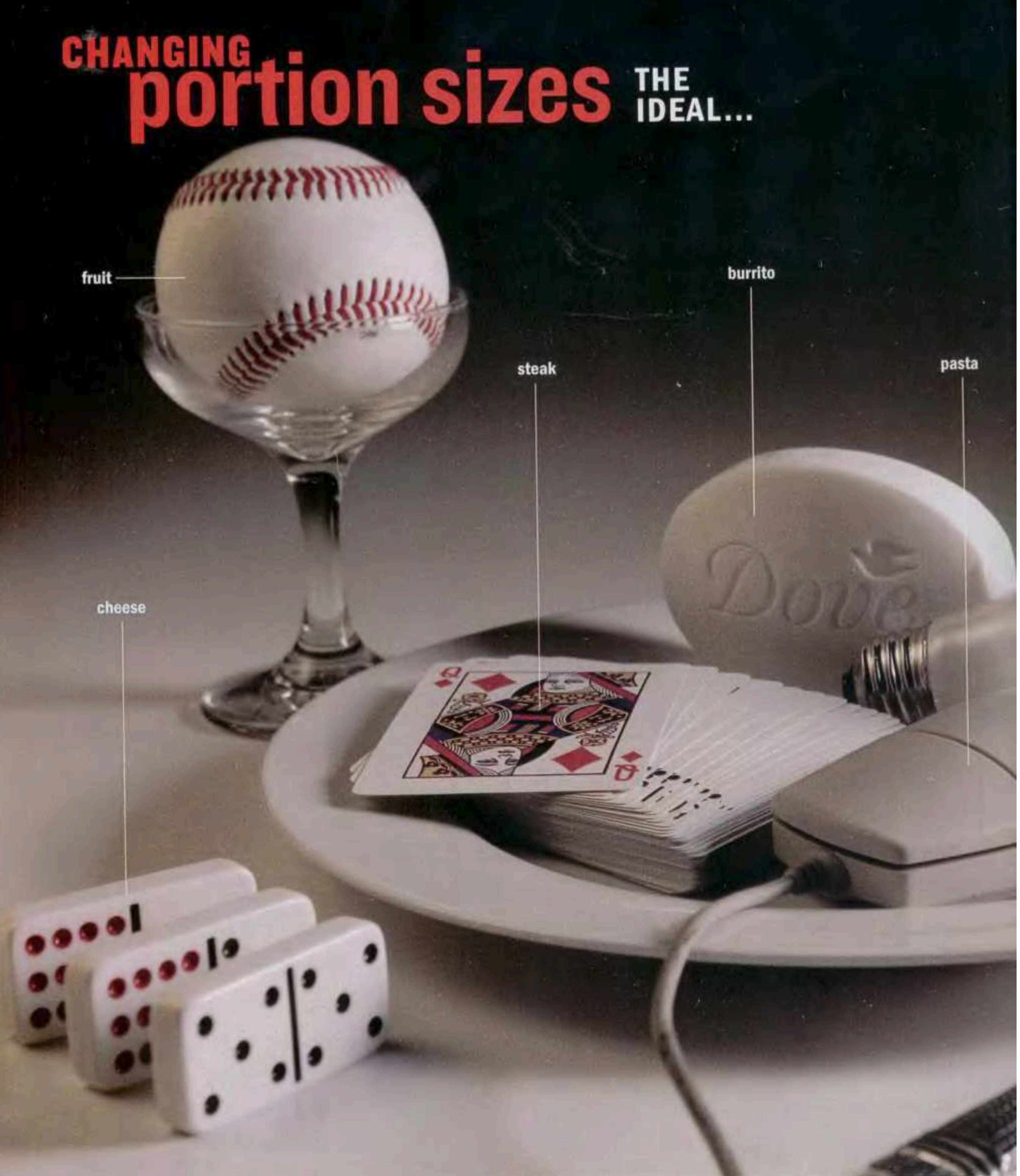


IT'S NOT ALL ABOUT FOOD

Public health officials now count playing with kids and washing windows as legitimate exercise, but no matter how much they lower the bar, they can't get most Americans to move a muscle. One in four doesn't get any exercise at all. Less than a third get the recommended minimum of 30 minutes a day, most days a week—and that's only what's needed to lower the risk of chronic disease. If you want to lose weight without cutting calories, you're looking at even more. That goes for kids too. "It's been a struggle," sighs Kristeen Davis, whose son, John, now 9, uses a treadmill and takes tae kwon do but still weighs 134 pounds (above). Obesity has reached red alert levels among children and adolescents, almost tripling since 1980—and small wonder. Suburban sprawl and lack of pedestrian-friendly streets have kids being driven instead of walking to school. And most schools have cut back on physical education. With losing pounds so difficult, the best strategy is to keep from gaining weight in the first place. Experts advise building activity into daily life by rebelling against convenience. Taking the stairs or grabbing a rake instead of a leaf blower can burn enough extra calories to prevent the added pounds middle-aged people tend to gain over the years.

	calories burned		calories burned
E-mail colleague (1 min)	2	Walk to colleague's office (1 min)	4
Ride elevator (2 mins)	3	Take stairs (2 mins)	19
Order take-out (1 min)	1	Cook meal	70
Load dishwasher (10 mins)	23	Wash dishes	80
Watch TV	35	Play cards	52
Go to car wash	35	Wash car at home	104
Play video game	53	Play basketball	280
Mow lawn/riding mower	88	Mow lawn/power mower	193

CALORIES APPROXIMATED FOR HALF HOUR OF ACTIVITY (UNLESS OTHERWISE STATED) FOR A 150-POUND PERSON.



famine that never comes. "If we understood the genetics well enough," says Anna Mae Diehl, a professor of medicine at Johns Hopkins School of Medicine, "we could fingerprint people when they are born and say: Ah, good genes. Lucky you. You can eat whatever you want. Or: Uh-oh. Poor kid. Better never have a doughnut."

A team led by Jeff Friedman at Rockefeller University discovered a piece of the genetic puzzle in 1994. In studies of obese mice, the scientists identified a gene that tells the body how to make leptin, a hormone that decreases appetite. Leptin, produced in the fat cell itself, turned out to be part of a thermostat-like system that maintains weight at a constant level. Think of it as a watchdog guarding against starvation by monitoring body fat. It doesn't wait for you to become skinny; it acts within a few days to correct any perceived imbalance. Lose weight and leptin levels fall, prompting you to eat more and

potato

butter

PORTION SIZES BASED ON RECOMMENDATIONS FROM THE AMERICAN DIETETIC ASSOCIATION AND WEIGHT WATCHERS INTERNATIONAL; 1900 CHOCOLATE BAR PHOTOGRAPH: HERSHEY COMMUNITY ARCHIVES; ALL OTHER PHOTOGRAPHS BY REBECCA HALE

When was the last time you ate a burrito the size of a bar of soap? Most of us are clueless about what a single serving should be, which is why nutritionists suggest using the objects pictured above as a guide. Portions have exploded since the '70s. Supersized servings of french fries and sodas are often two to five times larger than when they were introduced. Jumbo portions may appeal to our pocketbooks, but they assault our waistlines.

...AND THE REAL

1954 **Burger King**

2.8 oz
202 calories

2004

4.3 oz
310 calories

1955 **McDonald's**

2.4 oz
210 calories

7 oz
610 calories

1900 **Hershey's**

2 oz
297 calories

7 oz
1,000 calories

1916 **Coca-Cola**

6.5 fluid oz
79 calories

16 fluid oz
194 calories

1950s **Movie popcorn**

3 cups
174 calories

21 cups (buttered)
1,700 calories

Pictured at right nine months after gastric bypass surgery and 125 pounds lighter, Linda Hay (before at 314 pounds, left) celebrates with new confidence and a new car. Bariatric surgery, which has seen a fivefold increase in popularity since 1992, is risky. "We make it clear it doesn't solve all of life's problems," says surgeon Harvey Sugerman.

gain back the weight. Put on some extra pounds and leptin goes up; you eat less. It's part of an intricate biochemical and neurological circuitry that flashes signals on and off like a sailor's semaphore: EAT! DON'T EAT! EAT!

So if we take enough leptin, we can all fit into our high school prom outfits? It didn't turn out that way. Injecting leptin into people with a rare congenital inability to produce it does cause them to lose weight, but it wouldn't do much for the rest of us. In clinical trials, what worked in mice didn't always translate to humans.

The discovery of leptin and a number of other promising hormones has not yet produced a miracle drug. But genetic research is providing clues about why some people are more likely to get fat than others. We tend to assume that people who overeat simply lack willpower. What seems increasingly clear, however, is that the drive to overeat has strong biological underpinnings. People who are genetically susceptible to obesity don't necessarily have slow metabolisms that help their bodies hang on to fat. Instead, they may have a stronger biological drive to eat, especially in an environment where food is tasty, cheap, and plentiful.

The real question, says Friedman, isn't why so many of us are getting fat, but why, in our food-rich environment, is anyone thin at all?

One morning I click on the tube to see what food messages are reaching America's living rooms. According to a 2001 study published in the *Journal of Nutrition Education*, the average child in the U.S. will watch nearly 10,000 commercials touting food or beverages a year.

Click.

A huge bag of Double Delight Oreos swims into view....

Click.

Martha Stewart, looking as if she hadn't a care in the world, is making a chocolate ganache.

Click.

Finally, amid a sea of sugar, an image of healthy food flashes by:

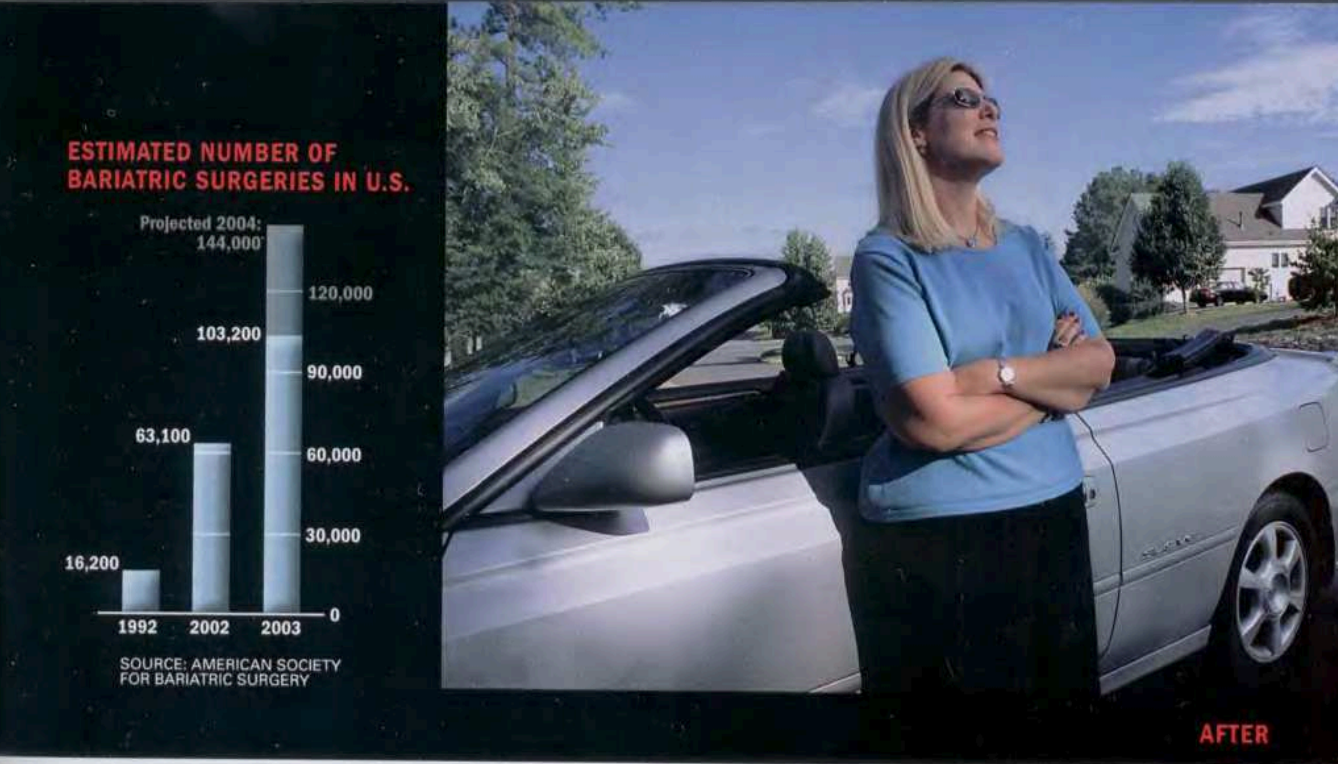
It's Bugs Bunny, munching a carrot.

What's a broccoli-pushing parent to do?

"We live in a toxic environment," says Kelly Brownell, director of the Yale Center for Eating and Weight Disorders. "It's like trying to treat an alcoholic in a town where there's a bar every ten feet. Bad food is cheap, heavily promoted, and engineered to taste good. Healthy food is hard to get, not promoted, and expensive. If you came down from Mars and saw all this, what else would you predict except an obesity epidemic?"

Brownell favors the intervention of legislation that would, for example, suspend food advertising directed at children or remove soft drinks and snack foods from school vending machines. "The parallels with tobacco are interesting," he says. "We could search for a drug that would cancel out the effects of smoking, or we could go right to the cause and do everything possible to get rid of cigarettes."

Perhaps what this country really needs to fight fat is a mom. Make that a vintage mom, with a gingham apron tied around her waist as she



places a bowl of vegetables on the table next to a skinless roast chicken. "Instead," says Harry Balzer, vice president of NPD, a marketing research firm that has been tracking what and where Americans eat for nearly a quarter of a century, "the restaurant has become the ultimate kitchen appliance."

Because I, too, deserve a break today, I am sitting inside a McDonald's in State College, Pennsylvania, with Barbara Rolls, professor of nutritional sciences at the Pennsylvania State University. For twelve dollars and change, Rolls and I have ordered a Happy Meal with cheeseburger, Coke, and fries; a Big Mac with medium fries and large Coke; and the Grilled Chicken California Cobb Salad with a packet of Caesar dressing. Inspection begins. Rolls peers at the Big Mac (600 calories) like an entomologist classifying a new species. The kid's Happy Meal cheeseburger turns out to be a regular size cheeseburger (330 calories). In total, 2,470 calories are sitting on the red plastic tray in front of us; if we clean our plates, we will each have consumed 77 percent of our daily caloric requirement in just one meal.

As we talk, I absently reach into a small bag of fries and scarf down the contents. Rolls calls this "mindless eating." "We pay little attention to the actual need for food," she says. In one experiment she and her students fed subjects baked pasta. "Some days we offered a normal portion. Some days we offered a portion 50 percent bigger for the same price. If we served them 50 percent more, they ate it. They just kept eating."

Betrayed by our genes, confused by the experts, we graze in endless pastures of food while the statistics grow more chilling. "Some of the earlier treatments like jaw wiring were extreme, but so is gastric bypass," Rolls says. "It's like the prefrontal lobotomy used to treat mental illness in the past."

Last year surgeons performed gastric bypass operations on 103,200 patients, with a complication rate of 7 percent. Linda Hay's four-hour operation was complicated by pneumonia. She stayed in the hospital five days longer than expected. A year and a half later, she has lost 162 pounds. She feels full quickly and eats sparingly —a protein shake for breakfast; salad or sandwich for lunch; Lean Cuisine for dinner.

Hay has given away her size 4X clothes, buys size 10 pants, and can climb a flight of stairs without gasping for breath. "And I've caught the eye of men when I go out—especially in my new convertible."

Short of stapling our stomachs, will we ever solve the problem of fat? Meanwhile the struggle has turned global. For the first time, the Worldwatch Institute reports, there are as many overfed, overweight people in the world as those who are underfed and underweight.

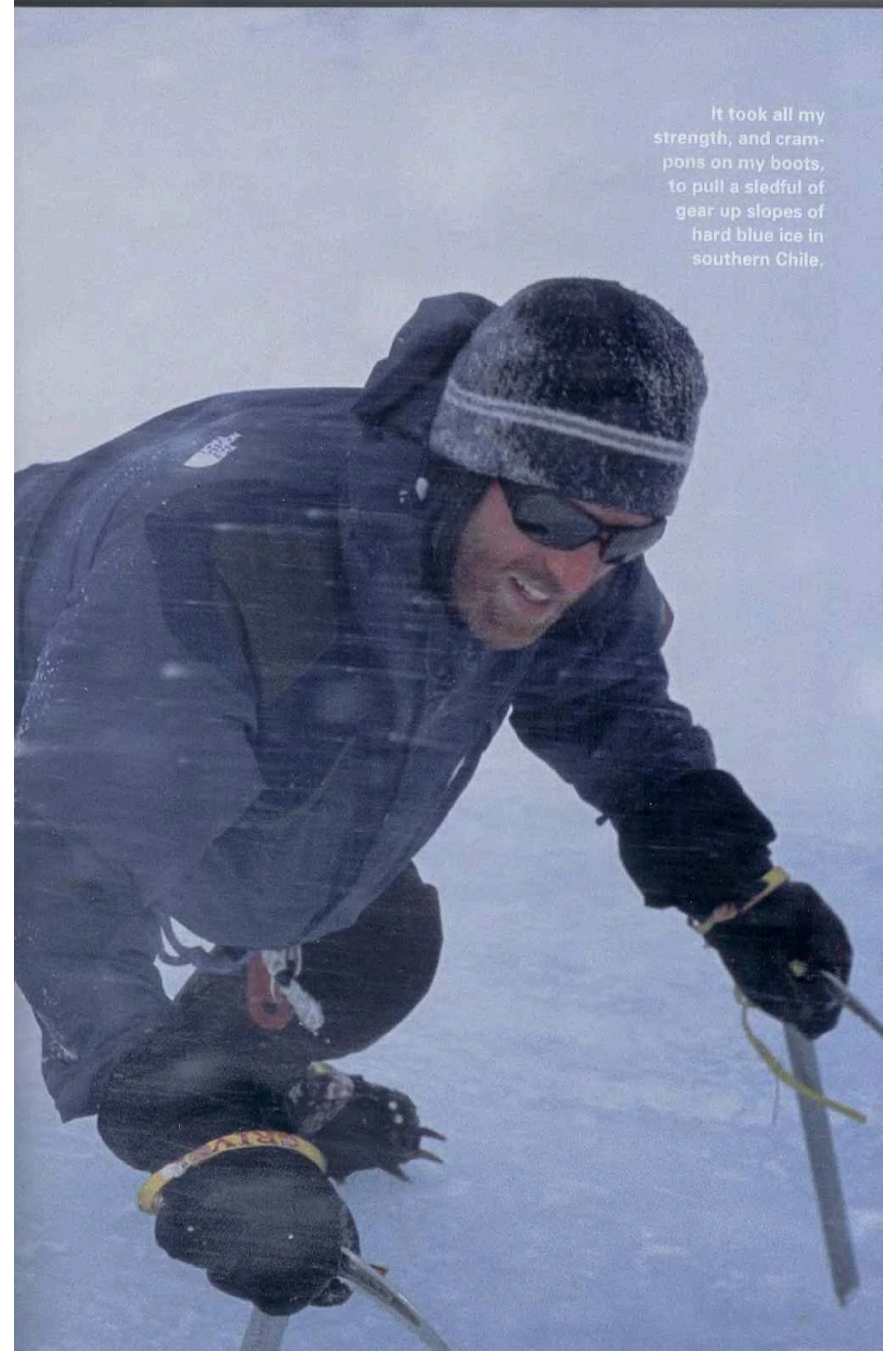
"There is no feast which does not come to an end," an ancient Chinese proverb warns. □

ARE YOU NUTRITION SAVVY? Are potatoes simple or complex carbohydrates? How many calories are in a gram of fat? Is butter more fattening than margarine? Test your diet IQ and find resources at **nationalgeographic.com/magazine/0408.**

Big Ice

The route was steep, our sleds heavy, the snow blinding. Just another perfect day on PATAGONIA'S Southern Ice Field.

By Børge Ousland • Photographs by Thomas Ulrich



It took all my strength, and crampons on my boots, to pull a sledful of gear up slopes of hard blue ice in southern Chile.

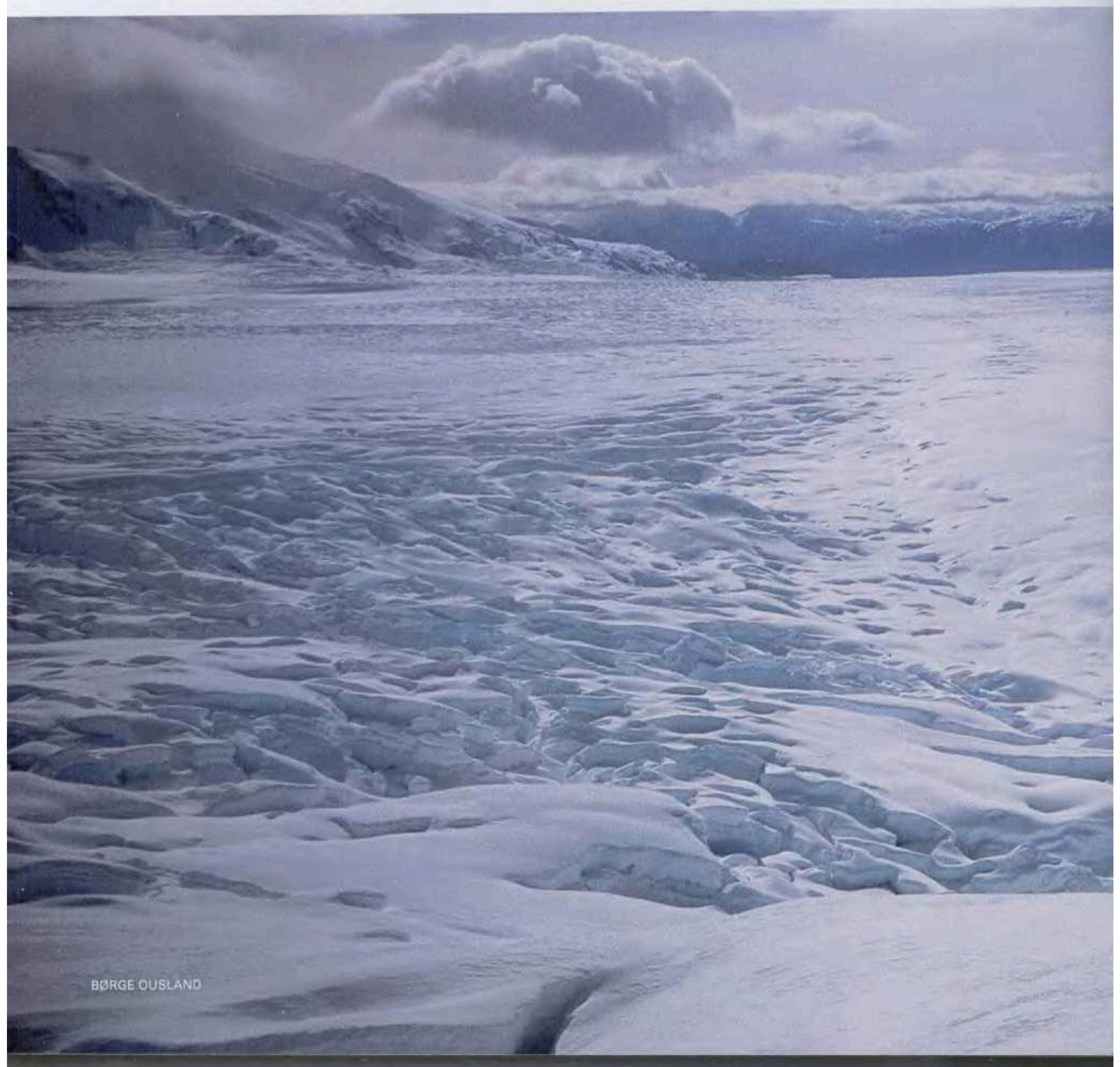
You can't get away from the weather on the Southern Patagonian Ice Field, although the word "weather" doesn't do justice to the elemental forces that rule this expanse of glaciers in southern Chile and Argentina, the largest on Earth outside Antarctica and Greenland. The wind knocks you down. The snow buries you alive. The icy mists blot out visibility for days. It's a place that makes you feel small—but also very alive.

No one had ever crossed the length of the Southern Ice Field without resupplying before. Most expeditions had been pinned down by bad weather. But photographer Thomas Ulrich and I had a plan: We would use satellite images and a handheld GPS to find the best routes around the deadly crevasses and over the snow-blasted peaks, routes we could follow in almost any weather. We'd combine Thomas's skills as a mountaineer and mine as a polar explorer to move as quickly and as safely as possible. And we'd make our start in late winter, when it's colder and darker, but when the snow bridges are stronger and the winds more predictable.

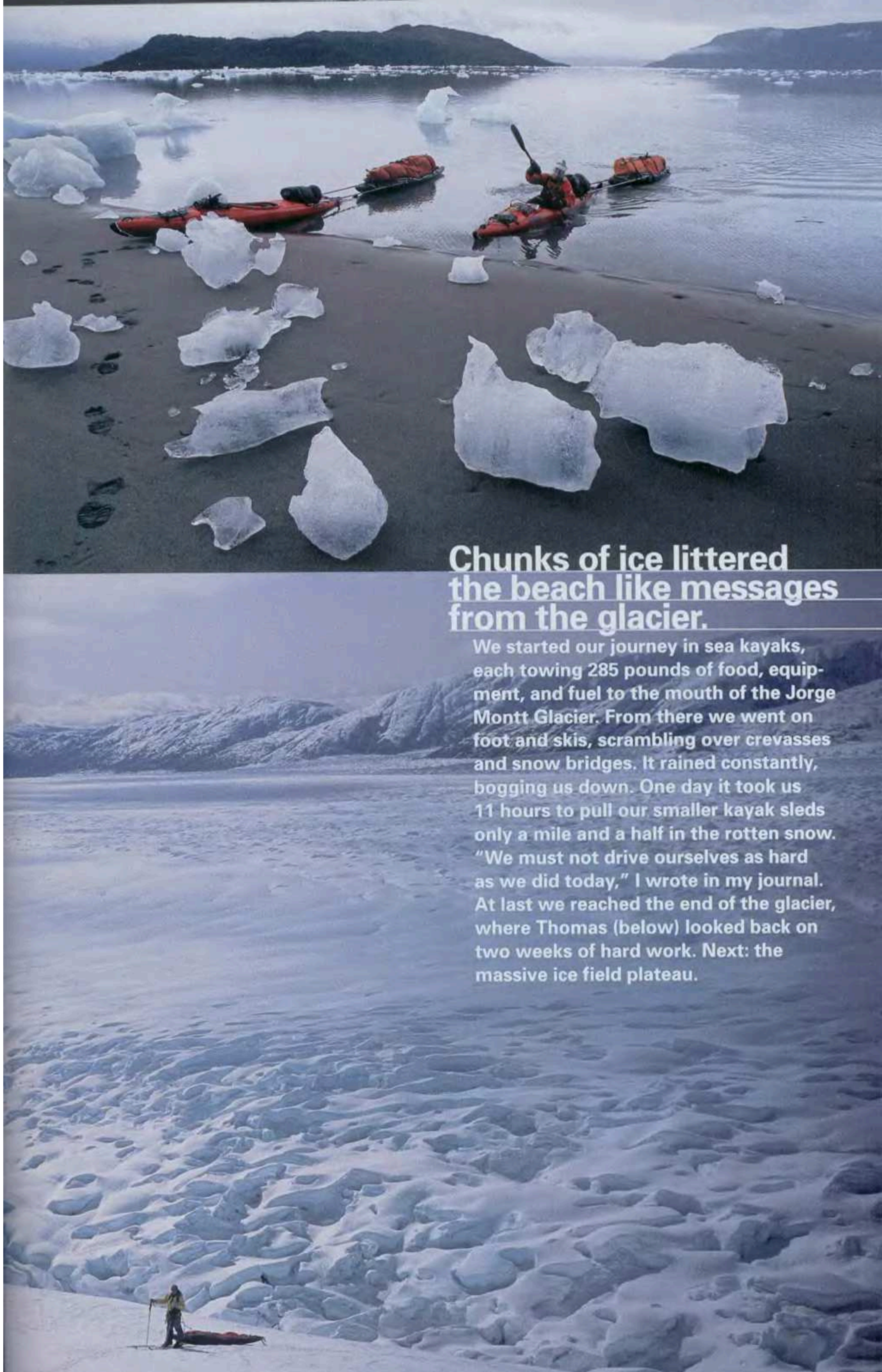
We left the Chilean town of Tortel on August 24, 2003, with four kayaks, enough food and gear to keep us alive for 67 days, and a healthy anxiety about what lay ahead. Then the hard work began.

SOCIETY GRANT

This Expeditions Council project was supported by your Society membership.



BØRGE OUSLAND



Chunks of ice littered the beach like messages from the glacier.

We started our journey in sea kayaks, each towing 285 pounds of food, equipment, and fuel to the mouth of the Jorge Montt Glacier. From there we went on foot and skis, scrambling over crevasses and snow bridges. It rained constantly, bogging us down. One day it took us 11 hours to pull our smaller kayak sleds only a mile and a half in the rotten snow. "We must not drive ourselves as hard as we did today," I wrote in my journal. At last we reached the end of the glacier, where Thomas (below) looked back on two weeks of hard work. Next: the massive ice field plateau.

BØRGE OUSLAND

The wind shook our tent so violently we couldn't get any sleep.

After being trapped for three days at camp 22 by 60-mile-an-hour gusts, we dug out our sleds, which were buried in the snow. Thomas found the ropes and climbing gear (left) we needed for one of the most dangerous parts of the trek: descending a huge icefall to Falla Reichert Pass. The icefall contains many crevasses, but it was better than another night in this exposed camp.

charting the trek

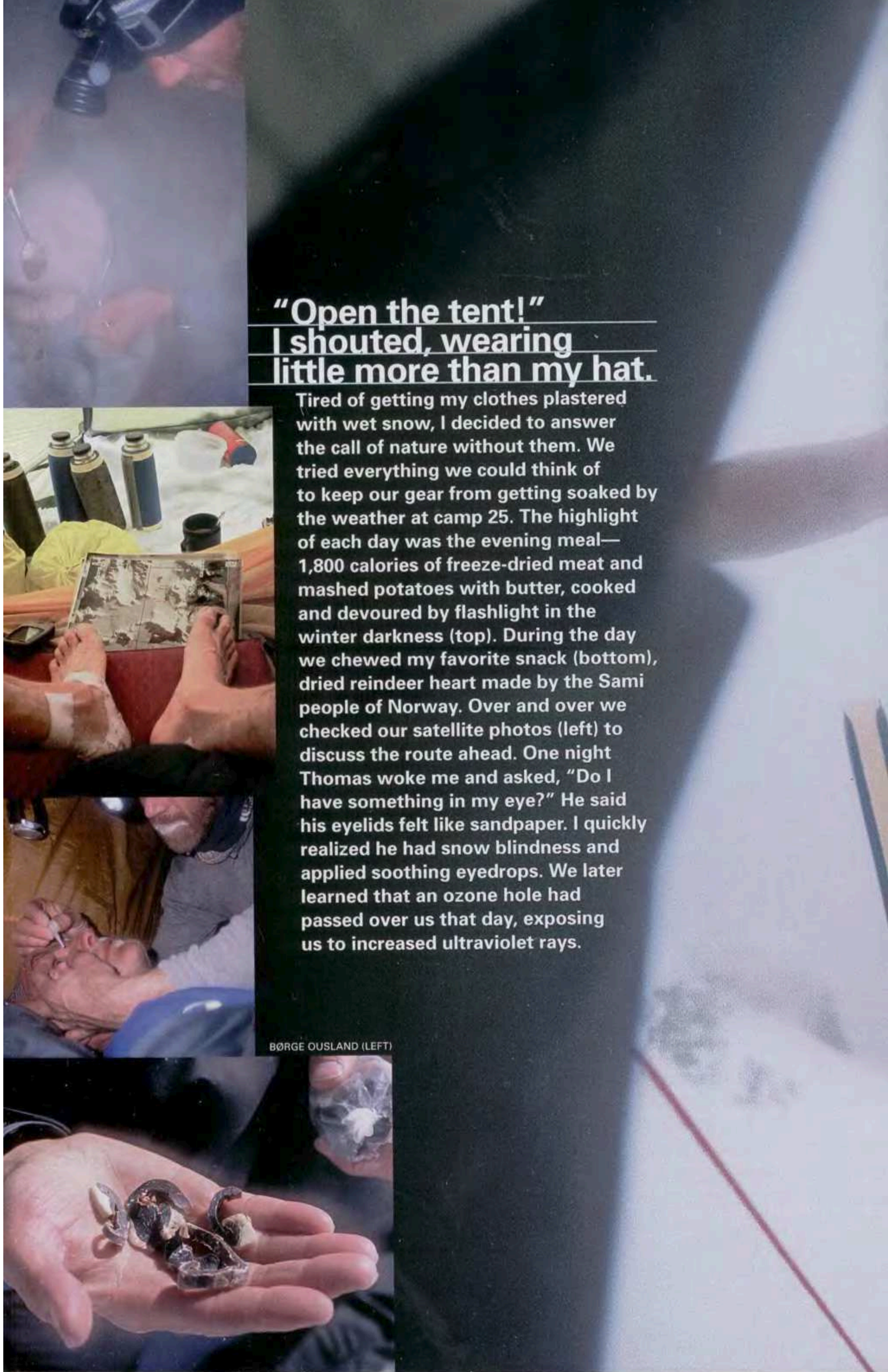
We couldn't find conventional maps with enough detail to plan our 325-mile route, so we created something better. The Canadian Space Agency gave us Radarsat images revealing likely areas for crevasses, and we bought Landsat photos showing terrain. In Coihaique, Chile, I spread out a string of these photos (left) to double-check GPS waypoints Thomas had plotted. We took the photos (right) with us to find the best routes and campsites, shown as red triangles in a newly created satellite mosaic (above).

▶ Zoom in on the explorers' route and campsites at nationalgeographic.com/magazine/0408.

TOP AND FAR RIGHT: LANDSAT MOSAIC BY ROBERT STACEY, WORLDSAT INTERNATIONAL INC. ABOVE: LANDSAT IMAGES BY JEAN-PIERRE PERRET, SWISSTOPO

NATIONAL GEOGRAPHIC MAPS

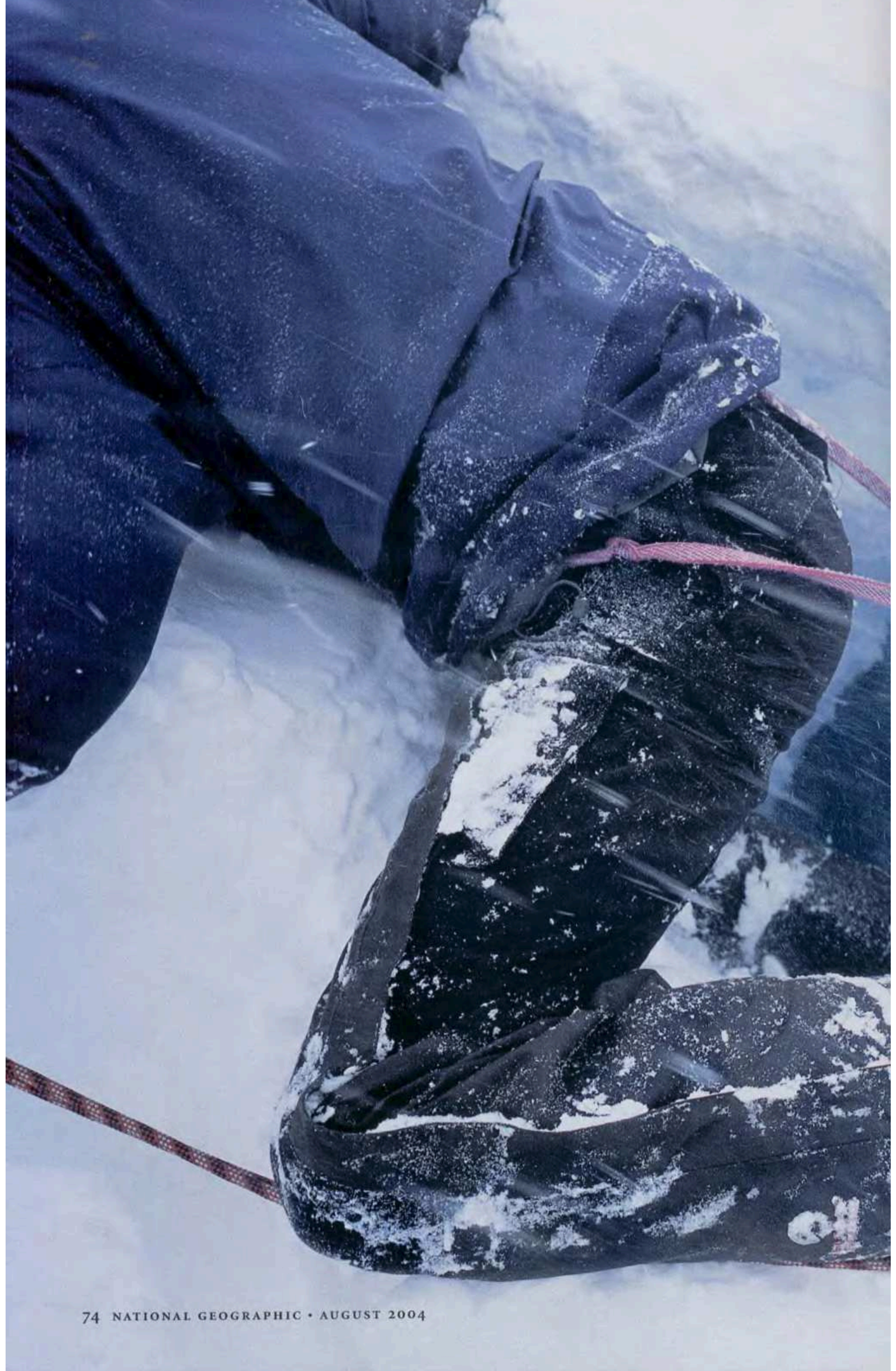
ARGENTINA
CHILE
FINISH
Puerto Natales
October 16, 2003
Exiting the ice field at Tyndall Glacier, we kayaked down the Grey and Serrano Rivers into Última Esperanza Fjord and on to Puerto Natales.
Última Esperanza Fjord
Falla Reichert Pass
Grey
Serrano
30
35
29
21
Tyndall Glacier
Sarmiento Strait
Pitt Channel
Camp (1-38)
Author's and photographer's route
Scale varies in this perspective. Straight-line distance from Tortel to Puerto Natales is 273 miles (440 kilometers).
North
elayed by winds, snow, and hiteouts, we took 16 days to ravel just 8 miles through Falla eichert Pass, seen in a detail right) of the larger satellite mage (above). After descending ,000 feet of a jumbled icefall with giant overhanging blocks, e climbed 4,500 feet up an cy peak, then rappelled down cliff on the other side. We new we were taking chances n avalanche-prone gullies, yet ur spirits were lifted by the ight of as many as 13 condors oaring high above us.
28
29
27
26
25
22
23
24
21



"Open the tent!" I shouted, wearing little more than my hat.

Tired of getting my clothes plastered with wet snow, I decided to answer the call of nature without them. We tried everything we could think of to keep our gear from getting soaked by the weather at camp 25. The highlight of each day was the evening meal—1,800 calories of freeze-dried meat and mashed potatoes with butter, cooked and devoured by flashlight in the winter darkness (top). During the day we chewed my favorite snack (bottom), dried reindeer heart made by the Sami people of Norway. Over and over we checked our satellite photos (left) to discuss the route ahead. One night Thomas woke me and asked, "Do I have something in my eye?" He said his eyelids felt like sandpaper. I quickly realized he had snow blindness and applied soothing eyedrops. We later learned that an ozone hole had passed over us that day, exposing us to increased ultraviolet rays.

BØRGE OUSLAND (LEFT)



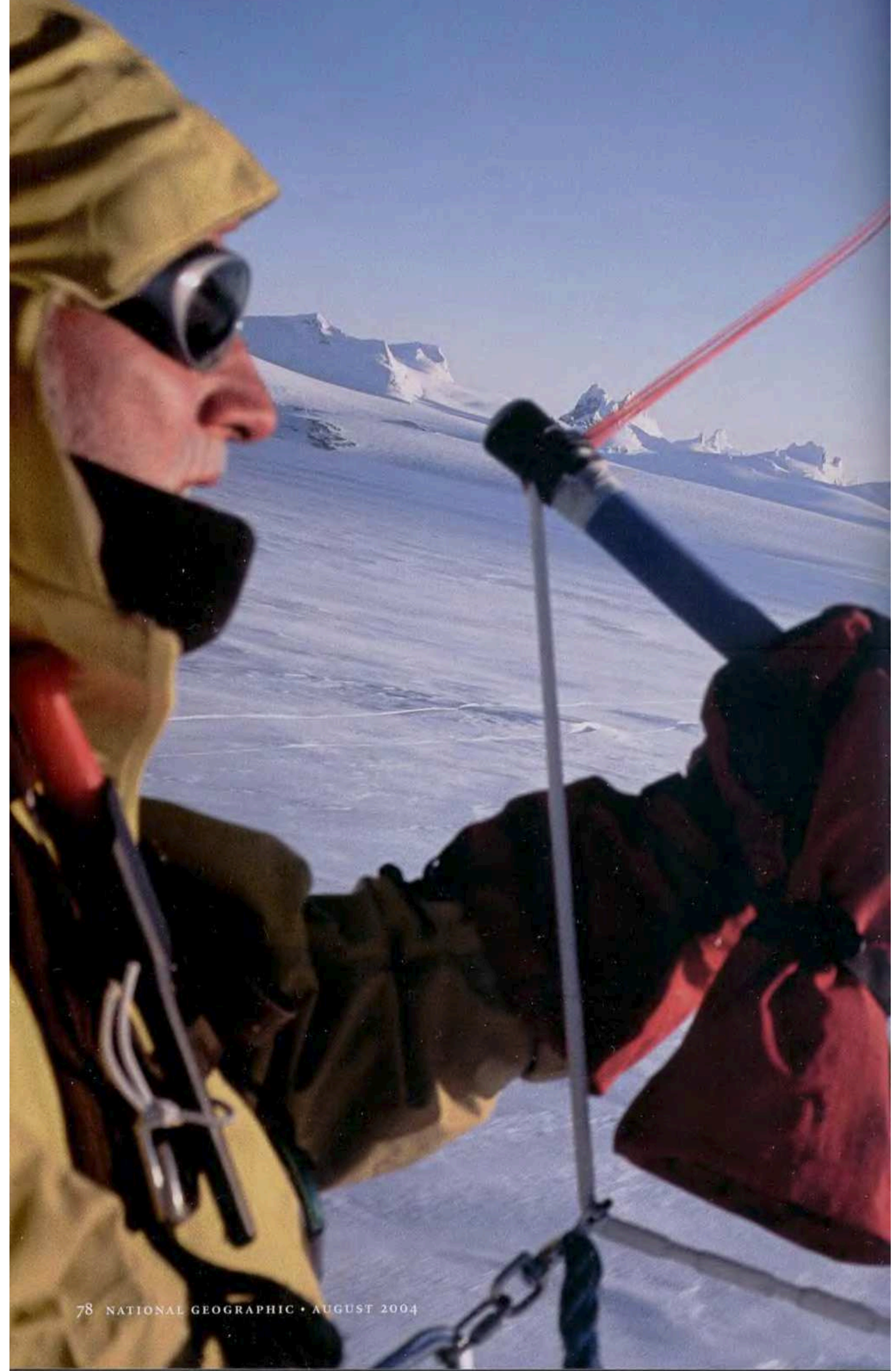
BØRGE OUSLAND (ABOVE)

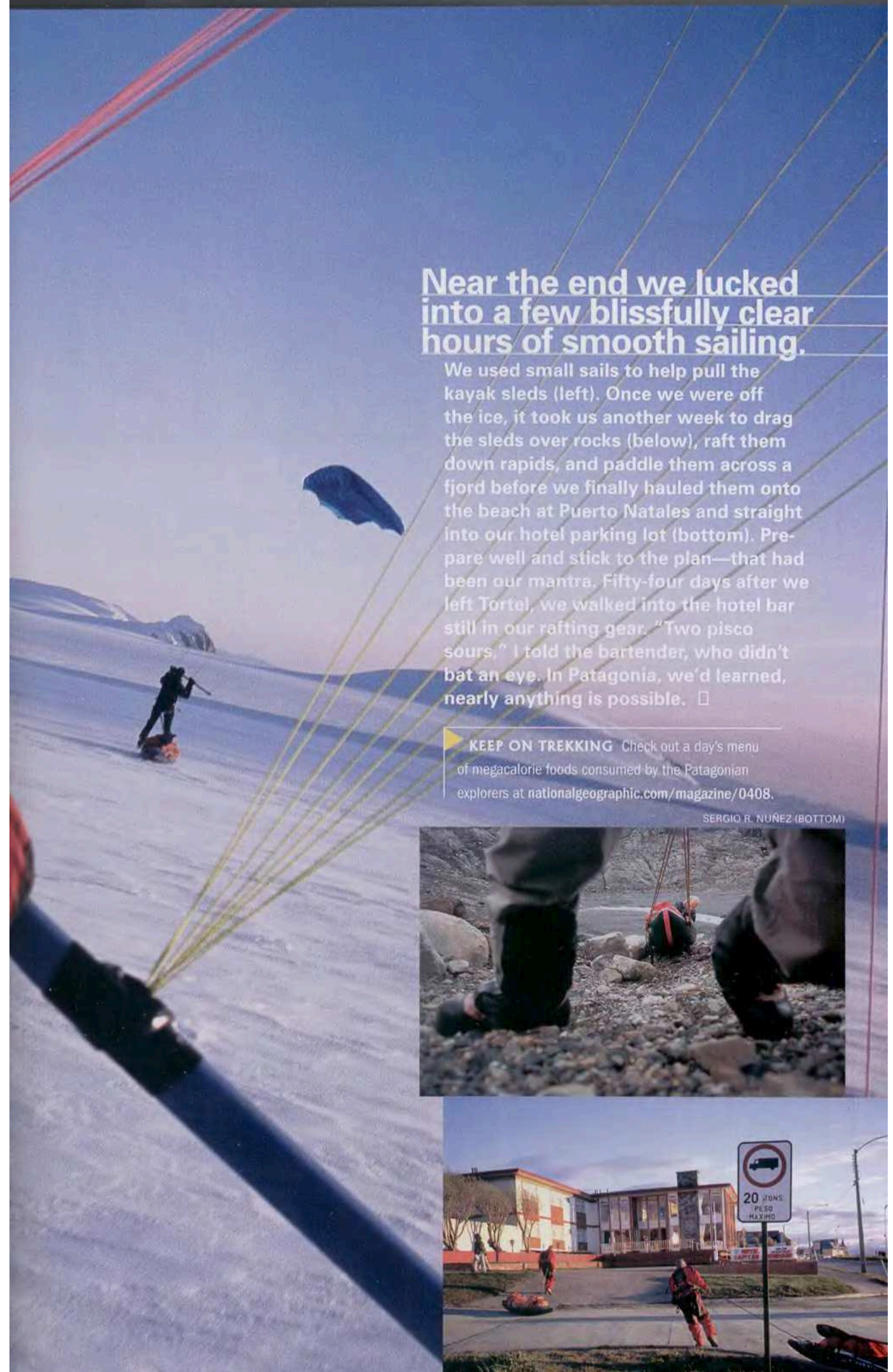
The crevasse opened up beneath me like a trapdoor in the snow.

My sled harness checked my fall, however, and I quickly climbed out. We'd already gotten through a difficult stretch before Falla Reichert Pass, where we rigged a rope system to move our sleds across a snow bridge over a crevasse (above). Thomas guided the sled as I pulled it across.

Now all we needed to do was lower our gear over cliffs of ice.

On a rare calm day we looked east into Argentina from the summit ridge of a 7,700-foot peak (above). Six weeks into our journey, we still had more than a hundred miles to go, beginning with a risky 2,000-foot rappel. After we buried bags filled with snow as anchors, Thomas went over the edge. Then I lowered the first sled, which got stuck on the cliff. Thomas had to climb back up to free it. The second sled went smoothly, and I followed (right). When we reached the bottom nine hours later, we gave each other a bear hug.





Near the end we lucked into a few blissfully clear hours of smooth sailing.

We used small sails to help pull the kayak sleds (left). Once we were off the ice, it took us another week to drag the sleds over rocks (below), raft them down rapids, and paddle them across a fjord before we finally hauled them onto the beach at Puerto Natales and straight into our hotel parking lot (bottom). Prepare well and stick to the plan—that had been our mantra. Fifty-four days after we left Tortel, we walked into the hotel bar still in our rafting gear. "Two pisco sours," I told the bartender, who didn't bat an eye. In Patagonia, we'd learned, nearly anything is possible. □

KEEP ON TREKKING Check out a day's menu of megacalorie foods consumed by the Patagonian explorers at **nationalgeographic.com/magazine/0408.**

SERGIO R. NUÑEZ (BOTTOM)

That's me
in the striped top with
the troupe from the Bros. Grim
sideshow on the Seaside Heights
boardwalk. Wish you were here.

greetings from the JERSEY

MEMO

To: Lynn Addison
From: Cathy Newman
Re: Jersey Shore

Geddoutahere! You want me to cover the entire New Jersey shore in three weeks? For your information that's a 127-mile stretch of surf from Sandy Hook to Cape May Point. That's dozens of beaches, all those tourists to elbow out of my way (they made a hundred million trips last year), not to mention these hazards: sunburn, heartburn, mako sharks, card sharks, stepping on jellyfish, being stepped on by jelly sandals.

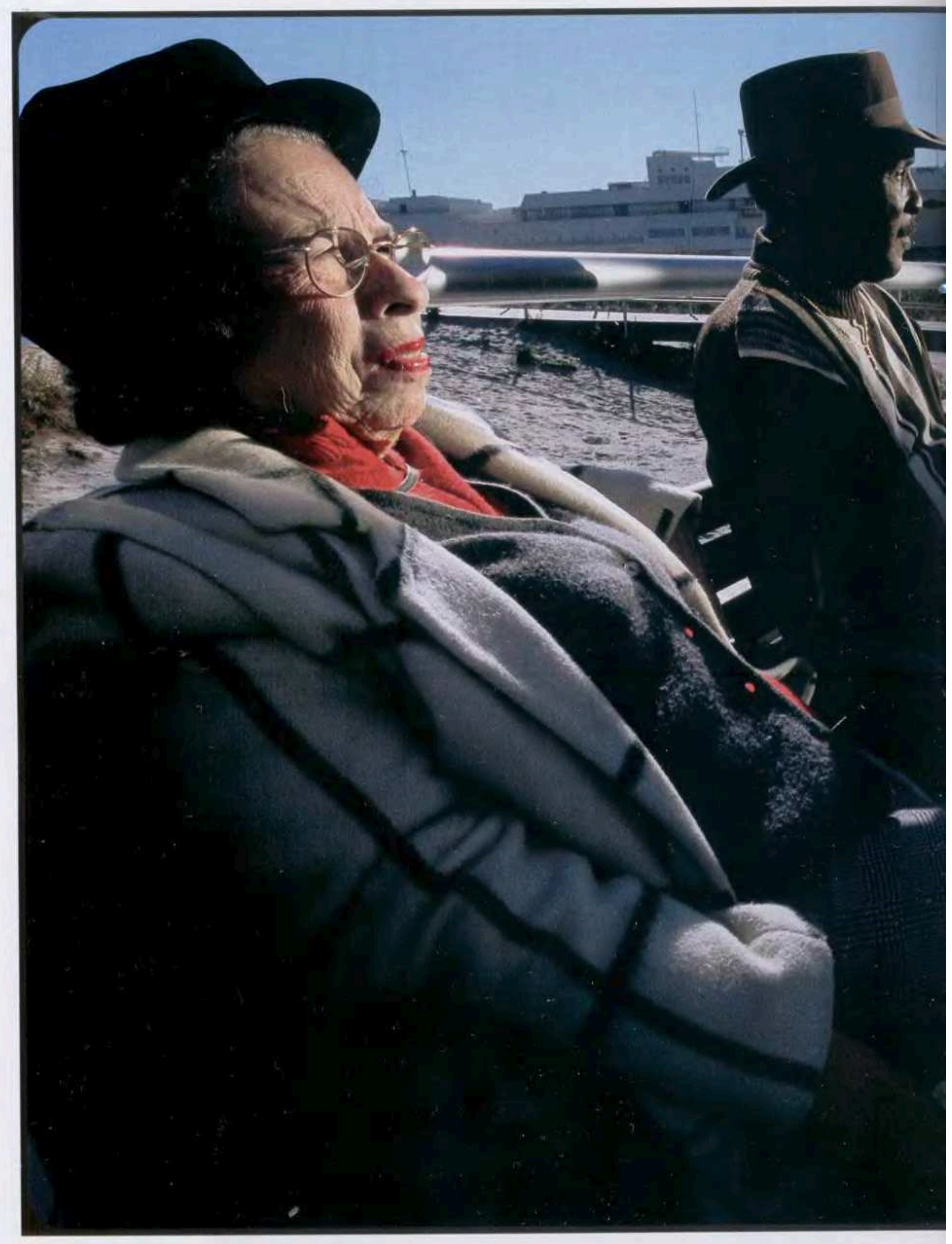
Editors! Why don't you get a real job?

NEW JERSEY
ATLANTIC OCEAN
GARDEN STATE PARKWAY
Sandy Hook
Sandy Hook Lighthouse
GATEWAY NATIONAL RECREATION AREA
Navesink Twin Lights
Navesink Beach
Rumson
Sea Bright
Monmouth Beach
Galilee
East Long Branch
Long Branch
Oakhurst
Elberon
Deal
Allenhurst
Loch Arbour
Asbury Park
Bradley Beach
Ocean Grove
Avon-by-the-Sea
Belmar
South Belmar
Spring Lake
Sea Girt Lighthouse
Sea Girt
Manasquan
Point Pleasant Beach
Point Pleasant
Bay Head
Mantoloking
Mantoloking Shores
Normandy Beach
Ocean Beach
Lavallette
Ortley Beach
Seaside Heights
Seaside Park
South Seaside Park
ISLAND BEACH STATE PARK
Barnegat Bay
Barnegat Lighthouse
Barnegat Light
Loveladies
High Point
Harvey Cedars
Frazier Park
Surf City
Ship Bottom
Long Beach Island
Brant Beach
Brighton Beach
Beach Haven Terrace
Spray Beach
North Beach Haven
Beach Haven
Little Egg Harbor
Holgate
Beach Haven Heights
Great Bay
EDWIN B. FORSYTHE NAT. WILDLIFE REFUGE
Brigantine Beach
Brigantine
Absecon Lighthouse
Atlantic City
Lucy the Elephant
Ventnor City
Margate City
Longport
Ocean City
Peck Beach
Strathmere
Whale Beach
Sea Isle City
Ludlam Beach
Townsends Inlet
Avalon
Seven Mile Beach
Stone Harbor
Anglesea
Hereford Inlet Lighthouse
North Wildwood
Wildwood
Wildwood Crest
Cape May Lighthouse
U.S. Coast Guard Training Center
Cape May Point
Cape May
• Resort with boardwalk, promenade
0 mi 10
0 km 10
N
NG MAPS

Shore

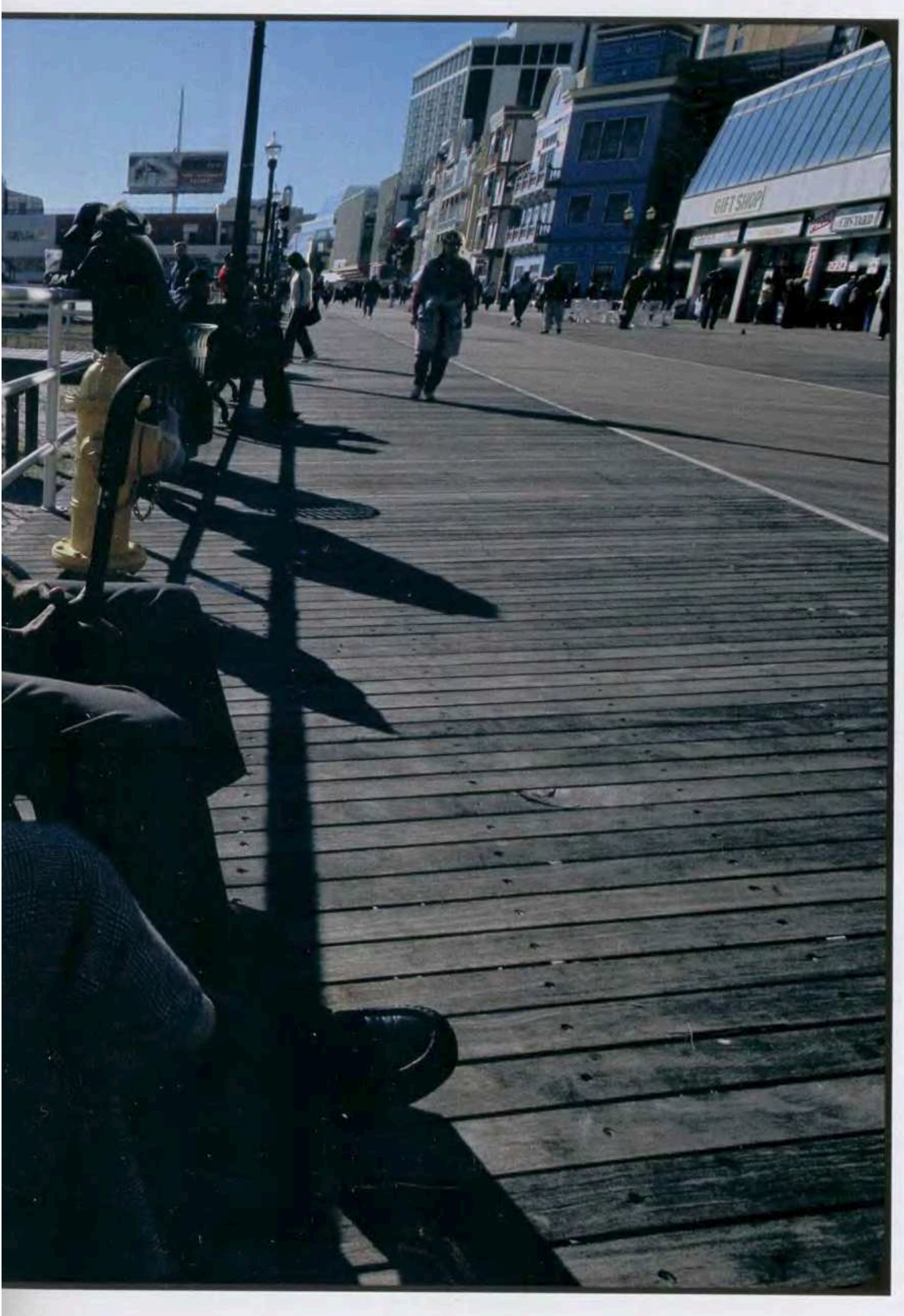
by CATHY NEWMAN
NATIONAL GEOGRAPHIC SENIOR WRITER

photographs by AMY TOENSING



Atlantic City

A shore town without a boardwalk is like an ice-cream cone without sprinkles. Jersey's shore, I can report, has 28 boardwalks and promenades. Cape May's was first; Atlantic City's, where Vera Green of Yonkers and John Toulson of the Bronx catch a few rays, was second.


GIFT SHOP

Long Branch

Dear Lynn: So I packed my sandals and "went down the shore" as they say in Jersey (it is never "going to the beach"). I thought I'd start at the north end and hit the sand in Long Branch. Yeah, right. In my face was a sign saying I needed to purchase a beach badge for five dollars a day. Badge shmadge. In Florida, where I grew up, you never paid a penny to go to the beach. What gives? Carl Jennings, Long Branch's recreation director, calmed me down by explaining that revenue from beach badges underwrites the cost of cleaning and raking the sand, lifeguard salaries, and general maintenance. You can walk on the beach for free, but come with umbrella and chair, and you fork out five bucks.

But even your badge might not get you where you want to go. Twenty years ago the New Jersey Supreme Court affirmed the public right to use beaches up to the high-tide mark. Problem is you have to get there first, and—badge or no badge—private beach clubs and homeowners often keep people away from the beach fronting their property. When I complained to a woman who owns a summer home in Mantoloking—one of the shore's high-rent districts—she replied that Jersey beaches are within a Frisbee throw of metropolitan areas like New York and Philadelphia, and there have to be limits. That's uppity stuff for a place like Joisey. I'm putting away my sunscreen. Will sit in the shade for the rest of the day.

Here's sand in your eye—Cathy

Bradley Beach

Dear Lynn: First they tell me there is no Santa Claus. Now they tell me that most sections of the boardwalk at Bradley Beach aren't made of boards at all—they're made of paving bricks. Maybe they should call it a brickwalk! It's a money issue, naturally. Wood boards need to be replaced every seven to ten years; pavers last forever. Towns like Lavallette and Atlantic City, which calls its boardwalk the Boardwalk with a capital *B*, stick to the tradition of wood. Others like Seaside Park use recycled plastic planks that last up to three times longer than wood. Kids like the plastic boardwalks—no splinters—but there's a hot-foot factor: Plastic turns searing in the sun.

Railroads actually gave rise to boardwalks. In the 1850s, when rails began to connect the Jersey Shore with eastern seaboard cities, tourism bloomed. But hotel managers got fed up with guests tracking in sand, so walkways made of wooden planks were laid down on the beach to save wear and tear on lobby carpets.

It also saved wear and tear on the tourists. "If you want to walk on the sand and not get gritty, then a boardwalk is the way to go," explains Dick Handschuch, a retired principal. He and his pal Sal Marino spent a year walking every inch of the 28 boardwalks and promenades along the shore in the course of writing a guidebook. Atlantic City's five-mile boardwalk is the longest on the shore; Sea Bright's, at 200 feet, is the shortest. Dick gives Ocean City three stars for having the friendliest boardwalk; Sal touts the magnificent ocean view from Spring Lake's boardwalk.

See you in September—Cathy

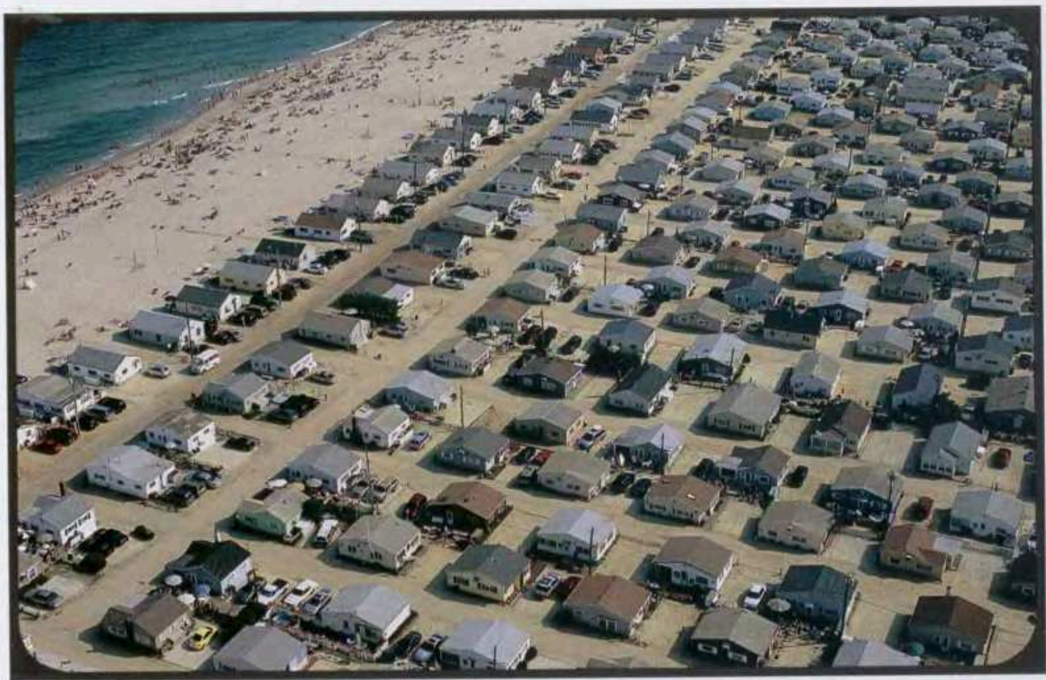
The spice boys at play: An umbrella-decorating contest that promotes Asbury Park as a gay destination featured this matching ensemble. After a downward slide, the town is on the upswing. The housing market is hot. "Everyone is seeing dollar signs," says Realtor Bruce Donaldson.

Asbury Park

Dear Lynn: Say the words "Asbury Park" to a grown-up most anywhere along the shore, and the response is a dreamy look. I respond that way myself. My mother, Edith Koenig Newman, grew up on a farm in nearby Freehold, a 30-minute drive from the shore, and every summer of my childhood we drove up from our home in Miami Beach to visit the northern branch of our family—the New Jersey *mishpachah*. Asbury Park, where my mother's baby sister, Alice, lived, was on the itinerary. In 1949 Alice married Milt Ruben, whose family owned a game called Fascination on the boardwalk.

Back then Asbury Park was still the jewel of New Jersey's north shore. In summer everyone dressed up to walk the boards. Children surrendered to the magic of the carousel.

Asbury Park was also a rite of passage for newly minted teenage



Think of the shore as one big sandbox. Those wishing to stay and play can rent a bungalow in Ocean Beach III. During the sand castle contest in Belmar, the shore becomes a canvas. "Two peas in a pod" (opposite) were runners-up in their division.

drivers who lived near the shore. "When you got your driver's license, you made the circuit," explained historian Helen-Chantal Pike. "Guys drove around town, radio cranked up to full volume, preening for each other. Girls flirted with the boys. Boys mooned the girls. And everyone gawked at the bikers hanging out in Mrs. Jay's Beer Garden."

Nostalgia has many guises. Some of us turn misty at the memory of the fried clams at Howard Johnson's. The restaurant, still standing, looks as if one of those flying saucers in a 1950s sci-fi movie had soared right out of the screen and landed next to the boardwalk. Others hanker after the lost taste of the popcorn and ice-cold Stewart's root beer sold at the Mayfair Theatre.

That was then. This is now. Race riots in 1970 tore up part of Asbury Park, accelerating a downward spiral that kept going. Property values plummeted. Slumlords moved in. Visitors stayed away. Today Asbury Park, derided by some as Beirut by the Shore, is waiting for the Messiah of Urban Renewal to appear. There was a brief sighting in the late 1980s, when the city sold its beachfront property to a developer who had Big Plans. But he went bankrupt, leaving behind the skeletal remains of an unfinished condo complex. Now oceanfront Asbury Park is an urban wreck of empty lots and decayed buildings. "It's the Lost City of Atlantis," Pike says.

But wait. In the past few years a new developer with deep pockets has materialized. Plans have been submitted and approved. This time, people say, it's going to happen. Really!

Really! At long last Asbury Park is on the rebound!

The gay community has moved in, snapped up Victorian properties, and renovated them to within an inch of their gingerbread lives. Restaurants and home furnishing boutiques are sprouting. Hopes are high.

"We're taking baby steps forward," says Robert DiSanto, manager of Paradise, the largest gay club in New Jersey. He's the first openly gay member of the Asbury Park Board of Education.

"Will Asbury Park actually come back?" I ask.

"Not overnight," he says. "But it will, even if we have to do it one house at a time."

Hopefully yours—Cathy

Asbury Park

Dear Lynn: Aunt Alice still lives in Oakhurst, not far from Asbury Park, so I invited her to reminisce over lunch. But first she had some business to settle.

"So. You were up in New Jersey last year and didn't visit?" she said.

"Sorry, Aunt Alice, but. . . ."

"You never call. I rest my case."

As for Asbury Park: "Milt and I don't come here now," she began. "Our car was vandalized right by the boardwalk a few years ago. Don't you go walking around at night. Too dangerous."

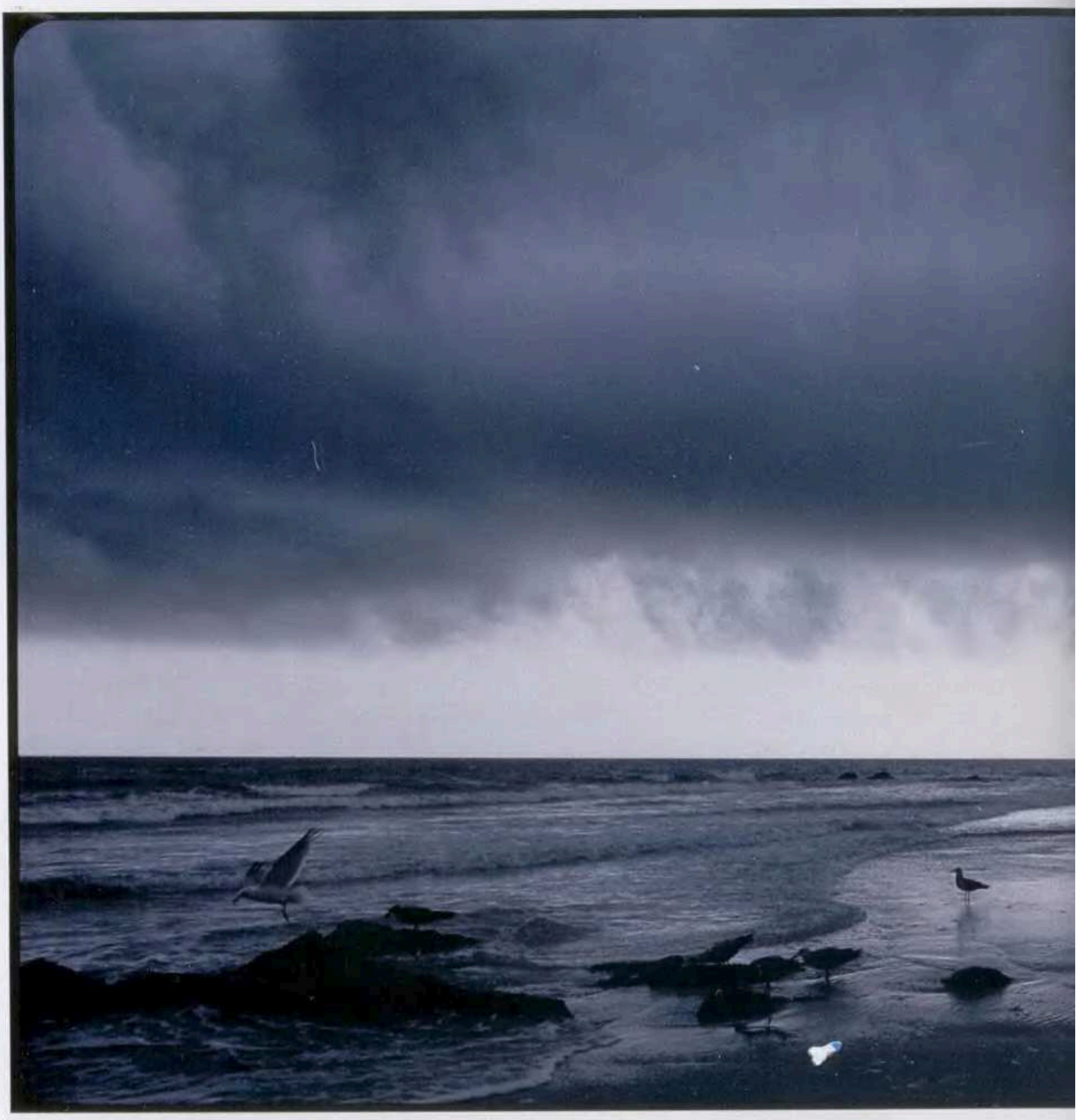
"Yes, but. . . ."

"I'm telling you, *don't go out at night.*"

"Tell me about running the games," I said, nudging her on.

"I stocked the prizes, collected the money, and sometimes ran the mike." Meaning she delivered the come-on pitch. "You should have heard me. I had the crowd all whipped up. Little me on the microphone." She looked pleased.

After lunch we drove by the boardwalk.



Aunt Alice was sad. "Upsetting," she said, surveying the decayed buildings. The Casino, where she had delivered her pitch, was pocked by broken windows and peeling paint. We peered inside the building that had housed a carousel, but there wasn't much to see—merely a cavernous ruin of a once glorious space.

"Will Asbury Park come back?" I asked.

"Not in my lifetime," said Aunt Alice.

Relatively yours—Cathy

Asbury Park

Dear Lynn: I spent the day looking for Bruce, Asbury Park's most illustrious citizen. Rocker Bruce Springsteen grew up in Freehold, but his career is forever linked to Asbury Park. Now he lives in ritzy Rumson (ten miles north), but he never forgot Asbury Park. And Asbury Park has never forgotten him.

An approaching storm turns the shore silver along an undeveloped strip of Long Beach Island, where the Edwin B. Forsythe National Wildlife Refuge provides a haven for beach-nesting birds.

"Does Bruce eat breakfast here?" I asked the waitress at Frank's. Frank's is a deli on Main Street, and on the wall behind the counter is a photo inscribed: "To Frank's. Where the elite meet to eat," with Bruce Springsteen scrawled across the top. Surely Bruce has his eggs over easy at Frank's?

"Never seen him here," the waitress said, slamming my coffee on the table.

"Ever had any Bruce sightings on the tour?" I asked Jean Mikle, who runs a Bruce Springsteen Rock-and-Roll Walking Tour around Asbury Park with Stan Goldstein.

"No," she said, "but a friend of mine sends one of Bruce's handlers newspaper clips when a story about him appears."

At the Saint, a nightclub in Asbury Park, owner Scott Stamper told a group of Bruce fans from England about the time the BBC filmed Bruce singing "Born in the U.S.A." at his club and how *right on the very spot where he was standing* Bruce turned and said: "Scott, hand me a Rolling Rock and a shot of Cuervo." The group looked properly appreciative; some lined up at the bar to get a Rolling Rock and Cuervo for themselves.

Nearly everyone in Asbury Park has a six-degrees-of-separation story about Bruce. Often it's a tale about how someone's cousin-in-law's daughter went to school with Bruce's cousin-in-law's son's next-door neighbor once removed.

Helen-Chantal Pike tells the best story. "I know the owner of a book store," she said. "One day five scruffy guys came in and started digging in their pockets for enough change to buy a book." Bruce, it turned out, was one of them, and the book was a rhyming dictionary.

"I can top that," Aunt Alice said, when the topic of Bruce surfaced at lunch. "My sister, your Aunt Molly"—she paused for effect—"lived *right next door* to the Springsteens in Freehold."

Rock on—Cathy

Bay Head

Dear Lynn: Bay Head, as its name implies, sits right at the top of Barnegat Bay. Bay Head is shipshape. It is as neat and tidy as the knife-edge crease in an admiral's trousers. "Bay Head," Evalyn Shippee informed me, "was founded by people of intellect and taste."

Shippee, who owns a gift shop in town called the Jolly Tar, drove me around in her mint green Jaguar to prove the point. Along East Avenue stand "cottages," each bigger than the next.

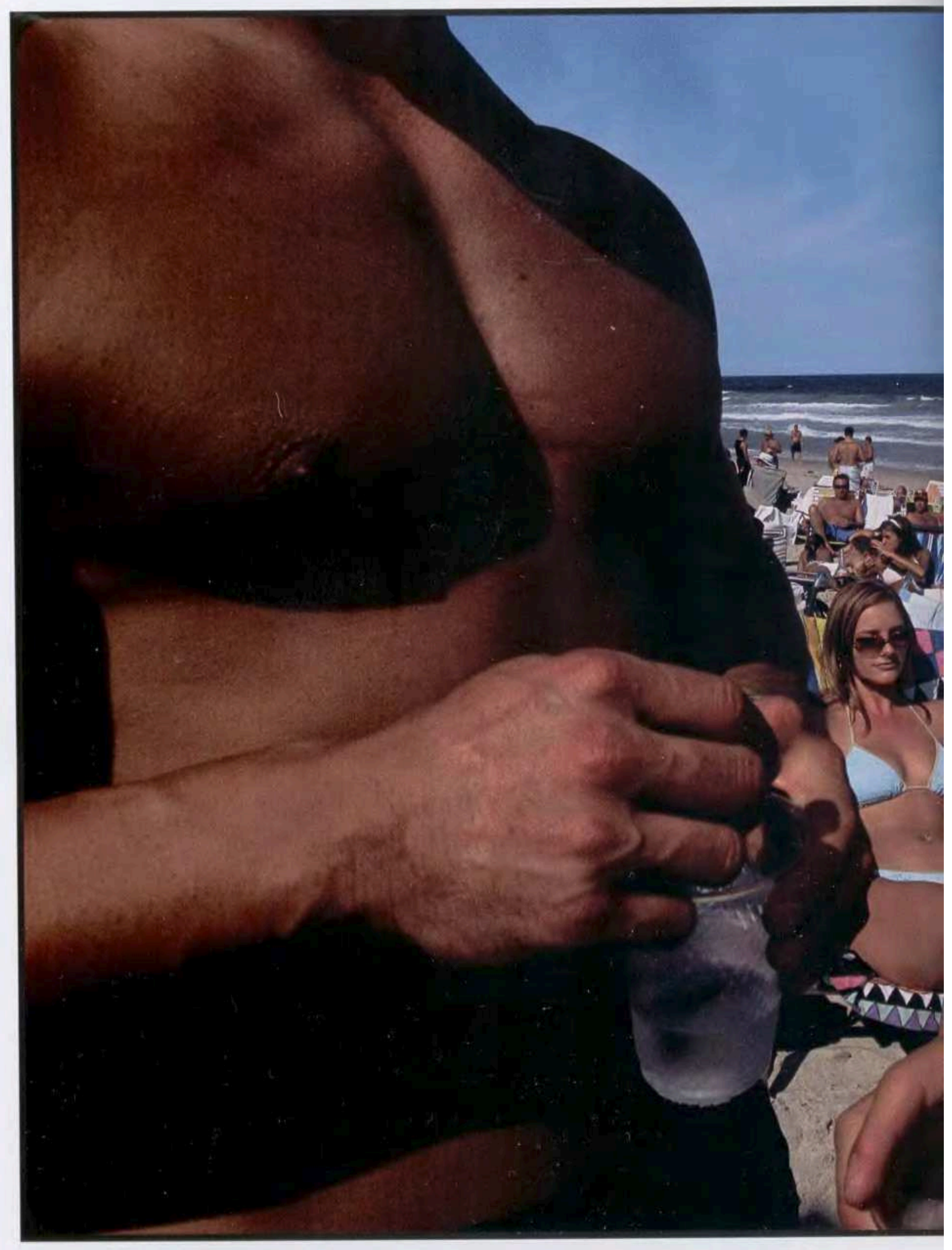
Cleanliness really is next to godliness—
just ask the Sisters of the Immaculate Heart of Mary at Stone Harbor's Villa Maria by the Sea. Heaven by the sea might also be a yoga class on the beach at Bay Head (opposite).

Oh to sit on the back deck of such a home overlooking that pearl of an ocean with martini in hand! "How much?" I asked. "About five million," Evalyn said. Later we drove around a neighborhood of what Evalyn called affordable homes in the $650,000 range, but it was not the same. Evalyn is the founder of the Bay Head Historical Society, which is actually headquartered in a Victorian clapboard house that sits in Point Pleasant, the next town to the west. It seemed to me that even the historical society has been priced out of Bay Head.

Later that week I was invited to lunch with Bob Spillman, commodore of the Bay Head Yacht Club. As soon as we sat down in the club dining room, Scott, the maître d', scurried over and placed the commodore's flag on the table as a kind of centerpiece. Through the plate glass window we watched the Bay Head Yacht Club burgee—a pennant with a five-pointed blue star on a white background—flapping merrily in the breeze. After lunch we walked down to the dock and admired an A-class catboat, which is 28 feet of gorgeous laminated oak, cedar, mahogany, and brass. I think I would enjoy learning to sail such a boat.

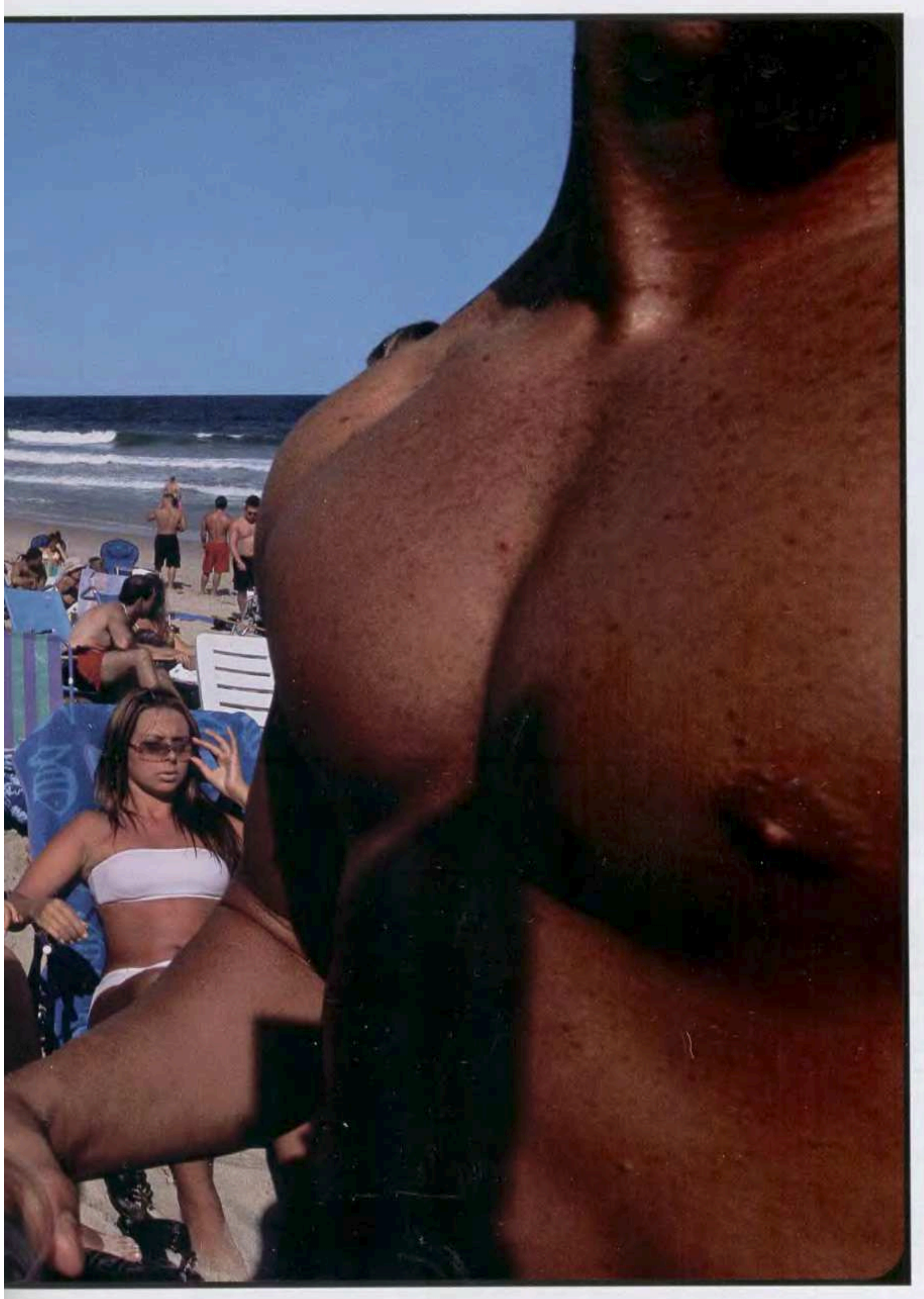
"How do you join the club?" I asked.

"We don't have a waiting list," the commodore explained, but before my heart leaped too high, he went on to add that there is a pool of candidates. First, several members have to write letters of recommendation on your behalf. Even with a grandfather in the club you're not a shoo-in. If you make the initial cut, you are interviewed by the membership committee, and your name is posted on the bulletin board for review.



Ortley Beach

Get a load of those pecs. It's enough to give a Jersey girl palpitations. The view from Joey Harrison's Surf Club, a popular bar in Ortley Beach, features a human landscape in all shapes and sizes. Diversity rules on the 127 miles of the Jersey Shore.



Should you be so lucky, my friend, to be invited to lunch at the club, you'll need to dress up a little. Check the code, which varies from meal to meal and day to day—and applies to anyone over the age of eight. Lime green and pink seem to be popular, but I suspect a splash of madras would not be out of place.

Ship ahoy—Cathy

Seaside Heights

Dear Lynn: Last night I was out with our photographer, Amy Toensing, and she got into an argument with Enigma. The Enigma is one of the performers at the Bros. Grim sideshow at Funtown Pier on the Seaside Heights boardwalk. Seaside Heights is pure honky-tonk, slightly seedy, and darker in tone than more family-oriented towns like Ocean City to the south. Enigma (his real name doesn't matter, he told me) is covered with blue-green tattoos, has horns growing out of his head (Teflon implants), sports a pair of nipple rings, and is blessed with an amazing digestive tract. Among other feats, he can swallow a sword with hardly a burp.

Amy wanted to photograph Enigma at breakfast eating his bowl of muesli, but Enigma found that idea a total. . . well. . . enigma.

"Breakfast? Muesli? I am the snide, cynical, and bitchy Enigma. Don't you want to photograph me swallowing a red neon tube?" he kept asking.

It turned out to be a career concern. Enigma, who is sweet not snide, was afraid if readers saw a photo of him in an everyday situation, the magic would evaporate; no one would come see him perform. We all have our vulnerabilities, even a tattoo-covered man with horns and nipple rings.

Enigma lives with Katzen, the Tiger Lady, who is tattooed with tiger stripes and has luxuriant whiskers growing out of her upper lip (Teflon, again). She was furious at Amy for even asking to photograph her out of her professional context. "This is who I am," she said, whiskers vibrating with fury. "I won't let you photograph me outside the tent."

Amy patiently tried to explain that she wanted to show readers a different, authentic side of the performers' lives.

"Sometimes people have too much information," Katzen retorted.

It was the proverbial debate between illusion and reality.

Will wonders never cease?—Cathy

Dear Lynn: THERE IS NO SALT WATER IN SALTWATER TAFFY. Couldn't you just cry? Bernt Hage, who has been making candy for 35 years at Berkeley Sweet Shops on the boardwalk at Seaside Heights, explains the origin of saltwater taffy like this: One day a big storm came up and blew waves over a vendor's tray of taffy, and when a child asked for some of that "saltwater taffy," the name stuck, so to speak. Bernt says there are only a few makers left on the entire Jersey Shore. The rest of the stuff is probably mass-produced in Hoboken and passed off as boardwalk taffy. Berkeley makes 17 flavors in 150-pound batches. Banana, chocolate, and vanilla top the best seller list. For the more adventurous:

Step right up. Come one, come all to the Bros. Grim sideshow and see the amazing, fire-breathing Danielle. "We're a throwback to the old-time circus," says impresario and owner Ken Harck. "We specialize in things you don't see every day."

root beer and molasses mint. Bernt gave me his secret recipe, which I pass along to you:

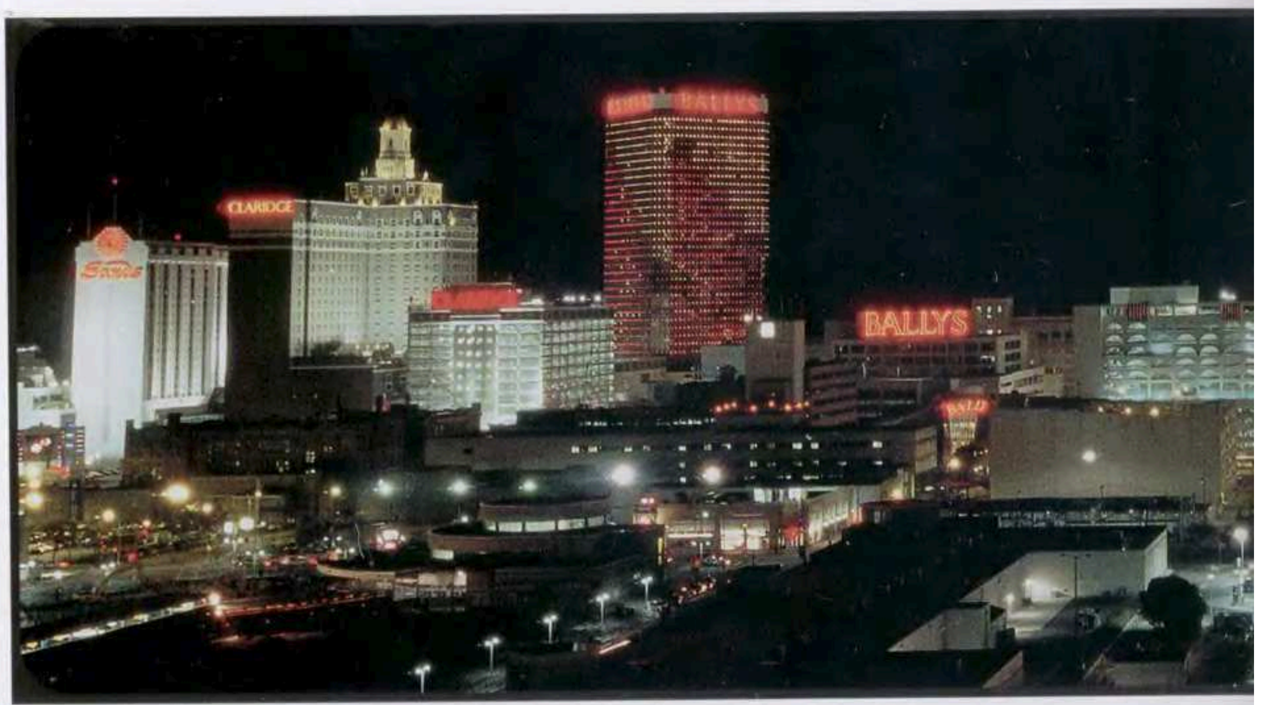
100 pounds corn syrup
36 pounds sugar
15 pounds vegetable fat

Stir ingredients and cook to 248°F. Pour in stainless steel pans and cool.

Put on taffy-puller machine for three minutes. Add flavor and color. Put in batch roller, and then rope sizer. Cut into two-inch strips and wrap in wax paper.

Yield: 13,000 pieces (enough to make a convention of dentists very happy).

Sweet dreams—Cathy



Atlantic City

Dear Lynn: While other kids at the Hun prep school in Princeton were studying calculus and Latin, Jim Rigot was at Monmouth Park betting trifectas. The others went on to Ivy League schools and became doctors and lawyers. Rigot became vice president of casino operations at the Borgata Hotel Casino and Spa in Atlantic City.

In 1976 New Jersey voters approved gambling in Atlantic City, and the city has been rolling the dice ever since. Last year 32.2 million visitors left 4.5 billion dollars in the 12 casinos here. At the Borgata there are 3,512 slots and 139 tables for games like roulette and poker. Rigot tells me that men prefer shooting craps, women like roulette, and it's a 50-50 split for blackjack. Culturally, Europeans like roulette and baccarat, Asians like mini-baccarat and pai gow tiles, whereas craps is quintessentially American. For a player, the best bet is blackjack. The house advantage on blackjack is only 0.5 percent compared with baccarat (1.2 percent), craps (1.41 percent) and roulette (5.26 percent), with slot machines up there at 8 percent, probably more. I prefer Go Fish, though no one seemed to share that particular interest at the Borgata.

Good luck—Cathy

Dear Lynn: Knowing how important it is to hold expenses down on assignment these days, I had a hamburger for dinner. All right, it cost $41, but give a girl credit for trying. How can any hamburger cost that much? Let me tell you. It was a 20-ounce Kobe beef burger the size of a softball. According to chef Romeo DiBona at the Old Homestead steak house, this baby is made from the beef of cattle that are fed beer and whole grains and massaged daily with sake. It must be one happy herd—for a while, anyway.

Frugally yours—Cathy

Lights! Action! Gambling! Atlantic City attracts over 30 million visitors a year; many hope to beat the odds at one of 12 casinos. Beneath the boardwalk, where the homeless sometimes spend the night, there is no jackpot, merely evidence of a run of bad luck in life.

Dear Lynn: Am feeling guilty about the hamburger. Today I saw another side of Atlantic City with Bill Southrey, director of the Atlantic City Rescue Mission. The mission provides shelter for up to 300 homeless people a night and serves more than 500 meals a day, but its guiding principle is to tackle the underlying causes of homelessness.

Bill and I walked the boardwalk and talked about the hidden world under the boards. Some 200 homeless people live there, and if you peer down through the slats you can spot the bedding where they settle for the night. As we walked, some of Bill's former residents came up and briefed him on how they were doing: One man had been off drugs for four years. Another had been sober for five. But no sooner does one problem get solved than two appear in its place. One woman approached Bill to say she was having trouble getting a new pair of prescription glasses. Another needed help writing a job résumé. Bill listened attentively and told each one where to get help. He slipped a man playing violin on the boardwalk a few dollars and stopped to talk to another who confessed he might need to come back and live at the mission. Bill said he'd look forward to seeing him.

As we passed the Trump Taj Mahal, Bill opened his wallet and showed me a photograph he had taken on his eighth-grade class trip to New York City. It was a man sleeping on a bench with his belongings stashed under him. "While everyone else was taking pictures of the Empire State Building, you focused on this?" I asked. He nodded.

We went to the rescue mission on Bacharach Boulevard. Such a big building, I said.

"It's so big," Bill sighed, "because the need is so great. It would be nice to solve some problems and move to a smaller one."

Bill told me that the worst day he'd ever had at the mission was the day his high school football coach turned up at the door.

"Billy?" said the coach, whose life had veered out of control.

"Coach R___?" Bill replied, swallowing hard.

Afterward, I wrote the Atlantic City Rescue Mission a check for $41. Call it hamburger redemption.

Sincerely—Cathy

Cape May

Dear Lynn: Queen Victoria, that princess of chintzes and fussy decor, would have loved this place. Frank Lloyd Wright, that master of the simple, disciplined line, would have taken one look and promptly impaled himself on the nearest picket fence. Cape May has one of the greatest concentrations of Victorian architecture in the country. There are 600 or more wooden Victorian buildings crowned with cupolas, turrets, gables, and frosted with fretwork spandrels, scalloped brackets, spindle running trim, and fish-scale shingles galore. In Cape May even the curlicues have curlicues.

Still, Cape May is restorative. It's that long horizon, the soothing oceanic swell—the best lullaby ever invented. I am standing on the southernmost point of the Jersey Shore. Time to hit the Garden State Parkway and head home. For the record it has rained constantly. I will not be wearing a tan when I return, but a layer of RUST.

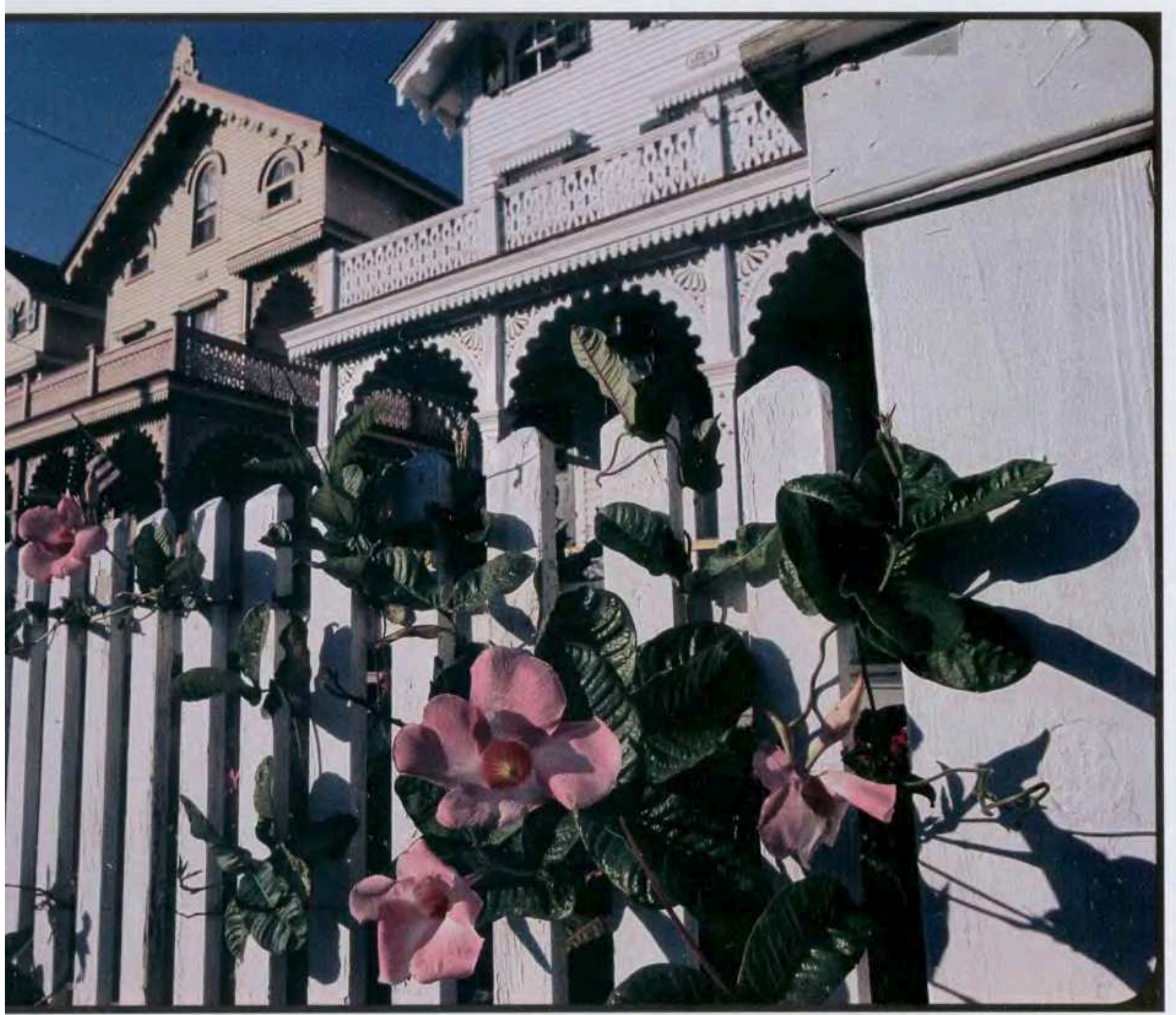
Ain't life a beach?—Cathy

MEMO

To: Lynn Addison
From: Cathy Newman
Re: Jersey Shore text

A theme? You say you want a theme to tie the Jersey Shore story together? Why not ask for blood? Oh, all right. Try this:

Nothing connects the towns of the Jersey Shore other than the shore itself. Asbury Park is as different from Atlantic City as a penguin is from a pelican. Likewise for Wildwood, Long Branch, or any other of the towns that dot the hem of the shore. There is no common ground—except the frail connective tissue of nostalgia. The shore is about memory. It is about family ritual. It's about childhood softened by the haze of distance. Every summer for ten years my friend Kathy made the pilgrimage from her Wilmington, Delaware, home with her family to her grandmother's beach house in Ocean City, New Jersey. "I remember the smells," she tells me, eyes brimming with tears. "The whiff of Coppertone. The astringency of Noxzema. The burnt-sugar smell of cotton candy."

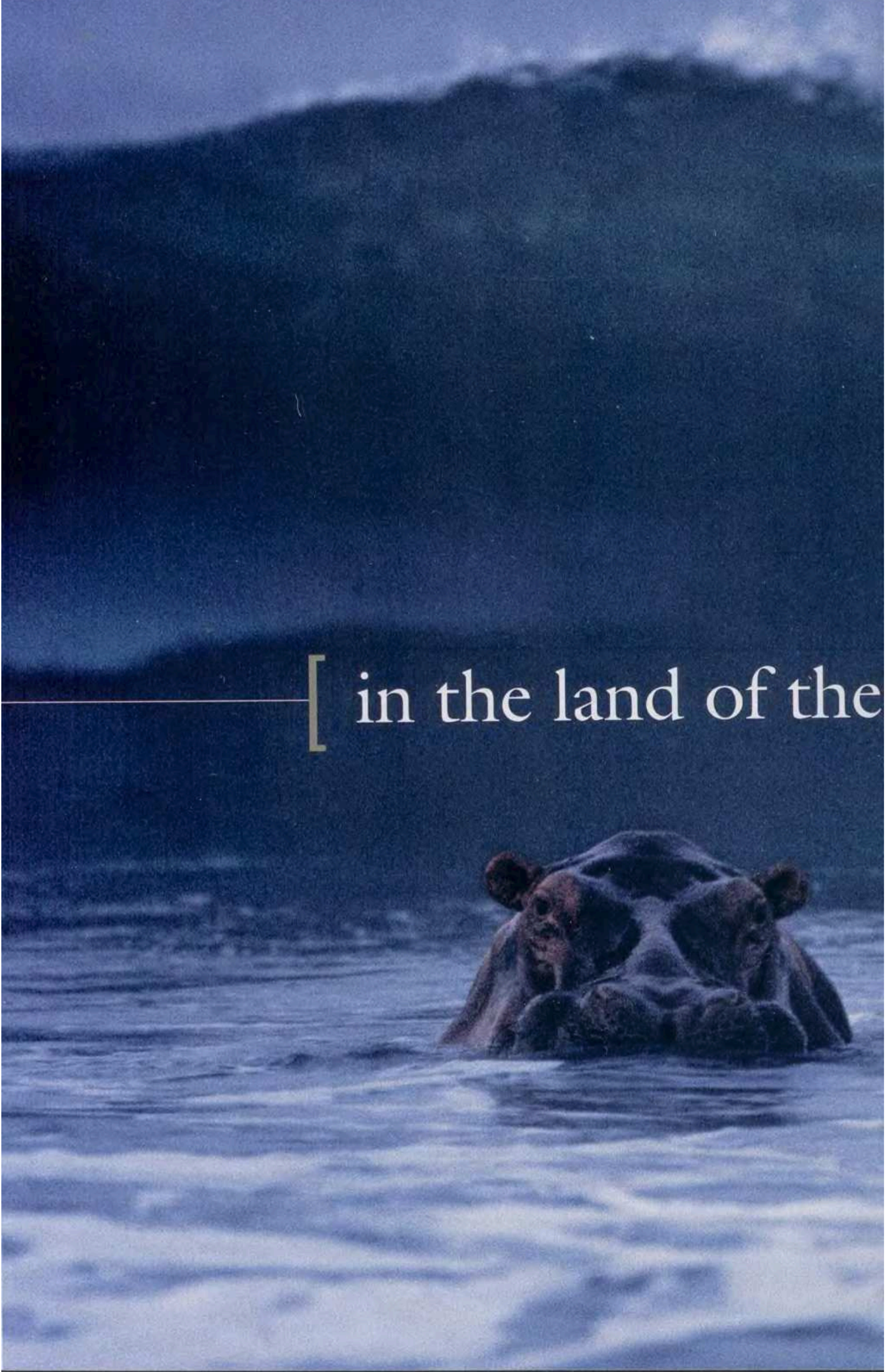


Painted in pastels, Cape May's Victorian houses are sweet as saltwater taffy. Architectural excess is a hallmark; the entire town is a national historic landmark. Cape May, like the rest of the Jersey Shore, can be quirky, but it's always fun.

And so we remember. . . . The car ride to the shore and that landmark last bridge before the sea greets us with its damp embrace of salt air. The race to eat an ice-cream cone before it melts. The sound of adult voices talking into the night, while we children settle down to sleep.

The shore is the Lost City of Atlantis in us all—a submerged longing for innocence and simplicity, for how we once were. And so we go again and again (if only in our minds) to places like Ocean City, Asbury Park, and Cape May. Places where we don't have to grow up. Places where we can grow back down. □

GOING DOWN THE SHORE From Teflon-implanted sideshow performers to a clothing-optional beach, take in the Sights & Sounds of the Jersey Shore with photographer Amy Toensing on what she calls a classic American vacation. Then share your favorite summer destination in a forum, read more of author Cathy Newman's letters from the field, and e-greet a friend with a Jersey postcard at **nationalgeographic.com/magazine/0408.**


[in the land of the

Gabon's Loango National Park

surfing hippos]

By J. Michael Fay

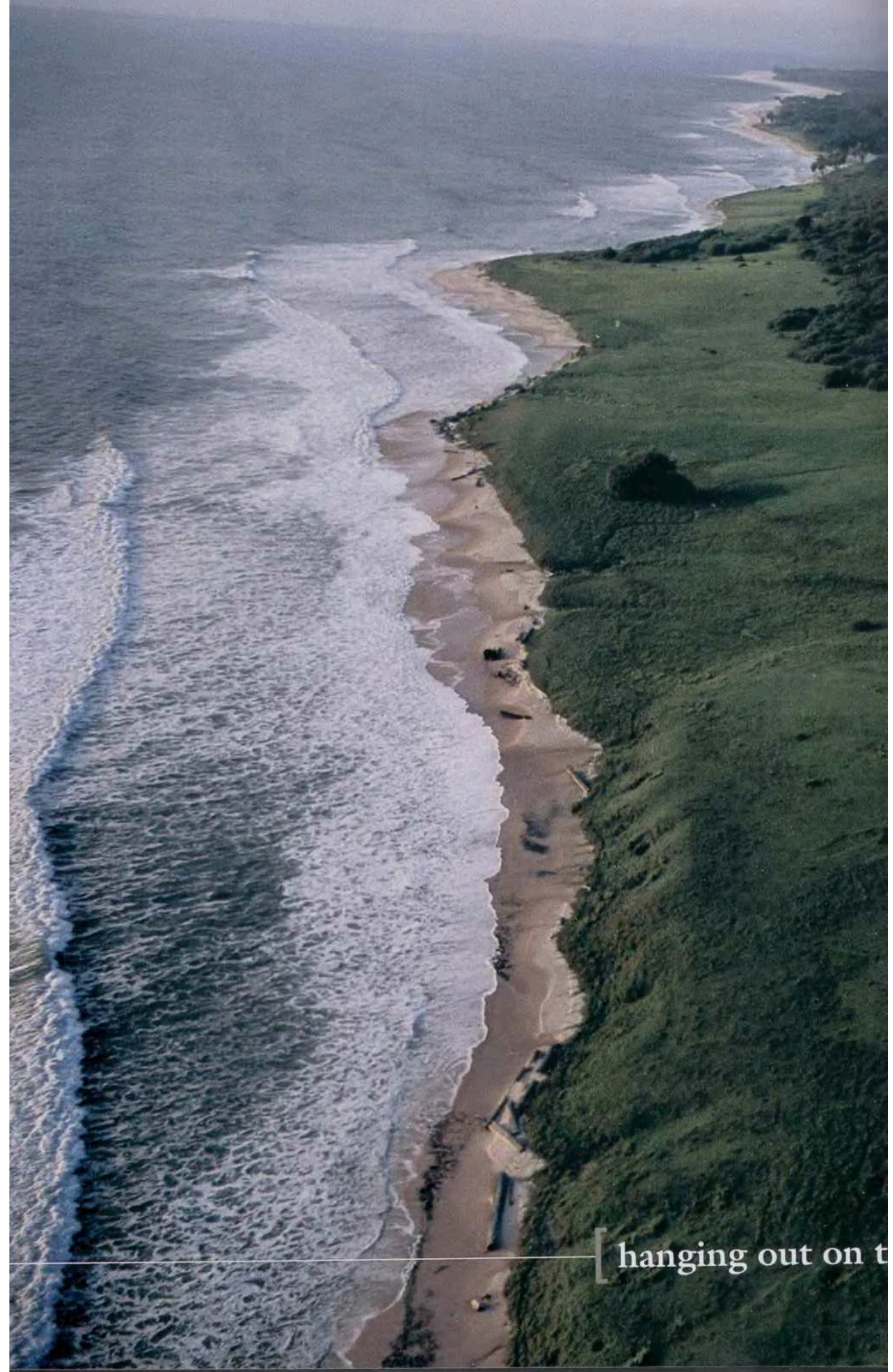
Photographs by Michael Nichols

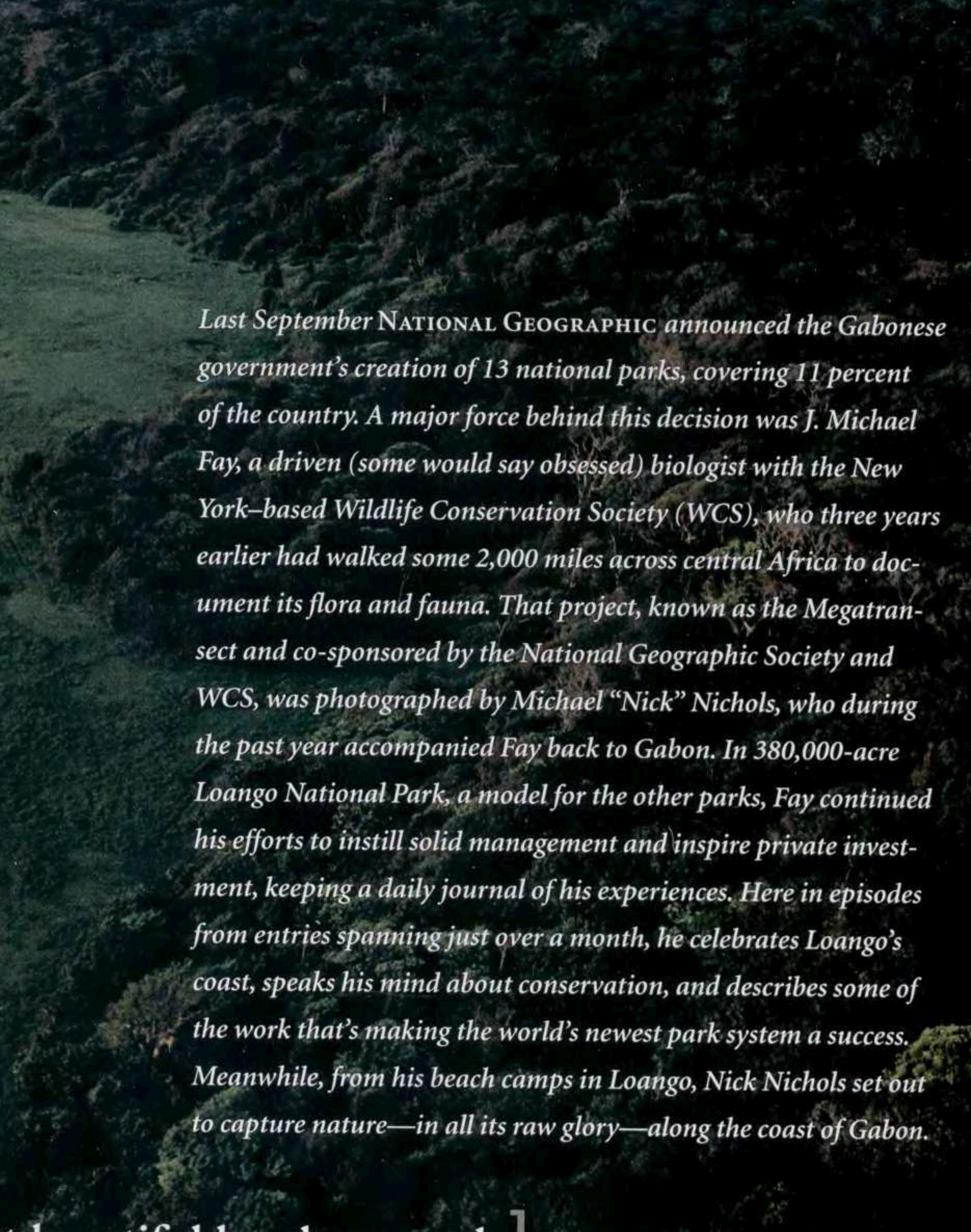
NATIONAL GEOGRAPHIC PHOTOGRAPHER

[we perched motionless, eyes on th

ter like spooked prey]

DAYS-OLD NILE CROCODILE (CROCODYLUS NILOTICUS), LOURI CREEK


hanging out on



Last September NATIONAL GEOGRAPHIC *announced the Gabonese government's creation of 13 national parks, covering 11 percent of the country. A major force behind this decision was J. Michael Fay, a driven (some would say obsessed) biologist with the New York–based Wildlife Conservation Society (WCS), who three years earlier had walked some 2,000 miles across central Africa to document its flora and fauna. That project, known as the Megatransect and co-sponsored by the National Geographic Society and WCS, was photographed by Michael "Nick" Nichols, who during the past year accompanied Fay back to Gabon. In 380,000-acre Loango National Park, a model for the other parks, Fay continued his efforts to instill solid management and inspire private investment, keeping a daily journal of his experiences. Here in episodes from entries spanning just over a month, he celebrates Loango's coast, speaks his mind about conservation, and describes some of the work that's making the world's newest park system a success. Meanwhile, from his beach camps in Loango, Nick Nichols set out to capture nature—in all its raw glory—along the coast of Gabon.*

ost beautiful beach on earth]

PETIT LOANGO AREA, LAST STOP ON FAY'S MEGATRANSECT

christmas hippo

When I first stood on the beach in Gabon, I took off my clothes and contemplated writing home to say: "Don't worry, Ma, I'm OK. Just don't come looking for me—you'll never see me again, ever." Christmas morning a decade later, and here I was back on that same beach, where hippos surf and buffalo sunbathe. Lounging half naked in front of my little tent as deep as you can get on the shores of what is now Loango National Park, gazing out on the vast, empty Atlantic, I thought: "You dog, Fay, how is it possible that you're the chosen one who gets to hang out here?"

This was a reunion. Nick Nichols, his wife, Reba Peck, and two sons, Ian (22) and Eli (14), were here, along with our old friend Jane Sievert and her seven-year-old daughter, Malia. Our campsite was a closely grazed patch of grasses and sedges amid a grove of manilkara trees and hyphaene palms. When we humans sleep, elephants and buffalo come to the clearing to feed. Olive ridley turtles bob their heads in the sea, munching on the algae growing on the coastal reefs, and tarpon roll in the surf, while humpback dolphins and bull sharks patrol the edge of the shore. This spot at the Moubani Creek Inlet is just up the beach from where, three years earlier, we'd popped out of the forest at the end of my long walk from the interior. (See the "Megatransect" series: October 2000, March and August 2001.) Today Jane, Malia, and I had a more modest plan. We'd decided to make a kayak trip up the Moubani, which winds about three miles inland through the mangroves. Yesterday we'd seen a hippo's tracks emerging from the sea, heading for the upper reaches of the creek, and we thought we might find him up there in some backwater.

[before the colonial powers intrud

It was a year since I had taken on Operation Loango, a partnership between the Society for Conservation and Development, an ecotourism company formed by the visionary Dutch entrepreneur Rombout Swanborn, and my employer, the Wildlife Conservation Society (WCS). The aim is to develop an economic base for Loango National Park (lodges, safaris, sportfishing, whale and turtle watching) and to assist the government in managing the park. In June 2003 we finished building Loango Lodge about 30 miles north of here, providing income that's being pumped into jobs for local Gabonese youth, equipping them to be everything from game wardens and ecoguides to auto mechanics. Our conservation projects ("operations," as we call them) include satellite tracking of elephants, whale research, prevention of poaching and illegal fishing, turtle monitoring, beach cleanup, and the day-to-day running of the park.

As Jane, Malia, and I shoved the kayak off, the resident goliath heron was knee-deep in the inlet, where he stands for hours, perfectly still, waiting for a mullet or baby tarpon. When we passed, he opened his enormous wings (seven feet from tip to tip) and took off like a jumbo jet, slow and steady.

We cruised along the narrow spit that separates the Atlantic from the hidden lagoon world and entered the dark, mangrove-lined creek beyond. The water was a mix of turquoise and black. At high tide the ocean spills over the spit into the lagoon, creeping up the inlet as the pressure from the sea builds, pushing the black, tannic water back upstream.

The mangroves here are big trees, their stilt roots forming an impenetrable tangle like some kind of hideous—or maybe wondrous—jungle gym. We passed a little grassy patch neatly mowed by the hippo the night before. It was now occupied by egrets, greenshanks (a long-legged sandpiper), and thick knees (a strange nocturnal shorebird somewhere between a coot and a plover), either stalking insects or just dozing upright.

We hugged the banks to watch the mangrove

Heads shaved as a sign of solidarity, local villagers learn to become park rangers under the tutelage of Fay. One of his most promising recruits is a convicted elephant poacher.

crabs that inhabit the stilt roots. Exquisite little creatures, they look like tiny carved ebony boxes with inlays of yellow and purple. Just below the tide line were masses of white shells—luscious oysters packed thick on every mangrove root. I thought about the village that had existed at the inlet until maybe a century ago. It was the northern outpost of the Loango kingdom, whose throne was near the Congo River some 250 miles to the south. The people of Loango came here for padauk wood (prized for its hardness and bright red color), for elephant ivory, and to acquire slaves from the neighboring tribes. It's clear from the abundant shell middens that oysters supplied the villagers with a steady source of food over many generations. I imagined the naked kids paddling up the Moubani in their dugouts, collecting oysters and catching fish and land crabs.

]is must have been a true eden]

As likely as not, paddling conditions were as perfect then as now—slight breeze coming off the ocean, cumulus clouds shading the sun (no more than 80°F), and not a tsetse fly to be seen. As we rounded the sharp bend leading us inland, the kayak leaving a silvery wake on the dark surface, some fruit bats scared up a biggish bird. We got into position for a look, and my eyes met with what looked like an overdressed clown with a sharp beak. Its breast was a rich rusty brown, the throat a bright white, the back and wings a crisp blackish brown. But the eyes: Wow, what eyes! In a bird the size of a raven they were about as big as a human's and lined with a thick white ring. This thing was the most wonderful avian delight I'd ever seen. A look in *A Guide to the Birds of Western Africa*, by Nik Borrow and Ron Demey, revealed the bird to be the white-backed night heron *(Gorsachius leuconotus)*. "Largely nocturnal; secretive and very shy by day," the book said. Hardly an adequate description of such a gem. The authors might have added: "Yet another little known and unbelievably beautiful product of nature that can be seen on any day in Loango National Park."

Pushing on, we came to a spot devoid of mangroves—an elephant trail that crossed the creek—like a gateway leading directly into the heart

of darkness. I noticed a patch of blue in the shallows and on closer examination realized it was the dorsal fin, in full regalia, of a lunker male mudskipper. He must have weighed half a pound. Just like elephant seals, these amazing amphibious fish have gruesome fights for territory. When the battles get heated, they present their almost sailfish-like dorsal fin, with its daunting show of iridescent blue spots.

This guy, however, wasn't in a tangled fight with a competitor but in the clutches of a predatory blue swimming crab. These eight-legged killers dig themselves into the sand and wait for a fish to pass above. When the moment is right, *whap!*—like a mousetrap going off—the prey is gripped in needle-sharp pincers. I'd watched crabs catching tiny fish fry before, but nothing as big as this mudskipper. He was still alive but nearly inert, writhing halfheartedly. I leaned over to take a picture, which must have distracted the crab. It relaxed for a split second, and with a flip of the tail the mudskipper was out of there. Empty pincered, the crab dug itself into the sand and vanished.

We landed on a bed of round volcanic rocks: geodes. How different this place must have looked hundreds of millions of years ago when there were active volcanoes, and dinosaurs roamed amid giant ferns. Today's megafauna are forest elephants, but as the now vague trail leading into the dark forest showed, their fortunes have risen and fallen with human activity. Several hundred years ago, when slavery and European diseases decimated people in the area, thus leaving the elephants largely to themselves, the trail would have been a well-trodden pachyderm highway. But in the 1900s when the French began a century of exploiting timber, ivory, crocodiles, and other wildlife, elephant numbers ebbed, and nature began reclaiming the trail. Still, I estimate there are a few thousand elephants in and around Loango today.

Our next excitement came from above—a movement in the trees followed by repeated kissing sounds. We spied a mustached guenon, a monkey about the size of a large tomcat with a bright white bar across his upper lip, staring at us, raising his head as he chirped an alert to others. The chirps intensified, and some bigger gray-cheeked mangabeys started barking—*ah! ah! ah!*—on the opposite side of the stream. Then red-capped mangabeys joined the primate orchestra: *kako! kako!* In the distance the boom of a greater white-nosed monkey sounded through the forest: *niao! niao!*

As we advanced upstream, the river narrowed, and snags began to block our progress. My eyes scanned the muddy bank, which suddenly began to surge. So did my heart, as the form of a massive hippo materialized no more than 25 feet in front of the boat. Face-on to us, he plunged into the water like a battleship released from dry dock full-speed ahead. He'd been sleeping under a tree, and we'd scared the bejeezus out of him in what he may have judged a surprise attack. We paddled frantically for the mangroves on the opposite bank, which seemed a mile away.

"Go, go, go," shouted Jane, "he's coming. He's right behind the boat." The theme music of *Jaws* popped into my head, along with visions of this behemoth chomping our chunk of plastic kayak right in half.

When we reached a tangle of mangrove roots —slippery like spaghetti and virtually ungrippable—I tossed the paddle aside and catapulted Malia up into the tree. Jane and I followed, clambering and slithering over the spaghetti branches until we had about ten feet of jungle gym between us and the water's edge. We looked back only to see a boil of water erupting just behind the bobbing, now empty, kayak. The hippo had plunged into the black depths.

We perched motionless for the better part of an hour, eyes fixed on the water like spooked prey. Because passage on foot through the mangrove maze wasn't an option, we'd have to hop back in that boat and get ourselves downstream without stirring the now invisible beast. All was quiet. Would it stay that way?

Jane and Malia struggled through the mangrove roots until they were about a hundred feet downstream. I jumped on the bow of the kayak, tipping it hard from side to side to call the hippo's bluff. The water stayed calm. No bubbles, no movement. That was good. I recovered the paddle and lost no time in zipping downstream to fetch the ladies, slipping as quietly as possible past every swirl and bubble.

[the surface began to surge...so did my heart]

It was midafternoon when we finally heard the crash of surf again. Otherwise all was calm, with the goliath heron back at his post, master of all he surveyed. Feeling a bit guilty about our close call, but giggling to myself, I thought: "Heck of a Christmas for a seven-year-old."

fish pirates

It was 6:15 a.m. at the Iguéla Inlet on Loango's northern boundary. Water flowing into this mile-wide estuary from the interior travels about 75 miles down the Nioungou River, through an enormous unpeopled basin of papyrus swamps, flooded forests, and raffia palms. As it crosses this plain, the water picks up nutrients, which are released into the sea, attracting concentrations of fish as thick as bouillabaisse.

I'd been based at the inlet for weeks, building our trawler surveillance camp and overseeing other operations. Gil Domb, who was filming our work for National Geographic Television, and I were drinking our morning coffee when he blurted out, "Wow, that's a big boat." I looked up, and damned if there wasn't a trawler just north of the inlet, so close in as to be, as we say, "zero meters from the beach." Checking it out with my binoculars, I saw an all-too-familiar shark-fin stripe on the bow. That would make her either *Le Pêcheur I* or *Le Pêcheur II*—the same lot who were here a couple of weeks ago, fishing inside the three-nautical-mile legal limit. Over the past ten months we'd become familiar with most of the rogue fishing trawlers off this stretch of the Gabon coast, and there was no mistaking the Pêcheur clan.

Our spotter team of three Gabonese included a new recruit, Basil Maganga, who was on duty that morning. His job was to watch for vessels fishing in restricted zones and, the moment he saw one, to alert the national authorities.

Scanning the beach, I saw no sign of Basil. Maybe he was still in bed. Maybe he was making breakfast. But wherever he was, I feared he was oblivious to the presence of the trawler right in front of his nose. Gil and I jumped in the skiff and sped off to "crab island," where I left him to film the daily fiddler crab migration. I then made tracks along the shore to find Basil. Instead of wearing his standard-issue ecoguide uniform, he was sporting Hawaiian-style trunks with a

white T-shirt and was inspecting the blank horizon with his binoculars, the trawler having disappeared beyond the point to the north.

I greeted Basil lightly and asked about boats. The coast was clear, he replied proudly. Stifling my feelings (I felt like strangling him), I calmly but firmly informed him that less than an hour earlier there was a trawler right in front of the camp. How could he miss it? What was he doing? It would, I said, be like missing an elephant in your living room.

Without saying another word, I sprinted north up the beach to record the trawler on video. Basil followed close behind. I stopped and scolded him again: Where were his spotting scope, tripod, GPS, notebook, pencil, video camera, and range finder—all of which should have been in his backpack?

As Basil ran back for his equipment, I approached the rocky point a few hundred yards up the beach and rounded the bend. There she was, with the shark fin and a hideous Spiderman painting on her bow: *Le Pêcheur I,* not even half a mile offshore in 30 feet of water, now cruising

south toward the inlet, scraping the bottom with her trawl nets. I got video of the trawler with the surf in the foreground; she looked as if she was going to plow right onto the beach. The video images are crucial evidence, which we send in an e-mail report to the authorities, with the time, date, GPS location, and name of the boat.

But this was the weekend, and I was on a desolate beach in Gabon. How could I get this mechanical monster clear of the inlet before it scooped up the fish soup?

I reached for my secret weapon—the satellite phone in my sack. About 20 seconds later Jean Ampari, my collaborator in Libreville, answered his cell phone. Jean works for the Forestry Ministry, which is also responsible for the environment, water, and fisheries. He's in charge of controlling all trawlers—and with a green light from President Bongo, we're helping him clean up industrial fishing in Gabon.

"*Bonjour,* Mike." Jean knew my voice.

"We have *Le Pêcheur I,* serial number 010311601, fishing illegally again in the same spot where we busted her two weeks ago, 500 meters off the coast, two kilometers north of the Iguéla Inlet, first noted at 6:30 in the morning and still fishing."

Jean said he'd call *Le Pêcheur*'s parent company, APG, right away. I repeated the details, excused myself for calling on the weekend, and thanked him for his action. I went back to filming the trawler, while Basil, who had caught up with me, was making observations through his spotting scope and furiously writing down the details.

As my camera rolled, *Le Pêcheur*'s twin nets came up, and the crew came alive. The catch spilled onto the deck, and the men immediately started sorting the fish into baskets. The prize fish here are snapper, jack, barracuda, threadfin, and drum—Gabonese favorites that fetch ever higher prices as supplies dwindle.

We couldn't see much behind the high steel gunwales except for arms flailing, the occasional fish flying through the air into a sorting basket or overboard, and countless dead fish being swept back into the sea through exit holes. The sanitized term for these rejected fish—young ones too small to sell for a profit—is bycatch. What happens to bycatch fish is akin to taking a herd of beef cattle, killing them all at once, and throwing away the calves. This bycatch represents the next generation of the very fish *Le Pêcheur*'s crewmen will need to live on, and here they were converting them into tern snacks.

When Basil saw this carnage, he flipped. He couldn't believe they'd just throw fish away like that—enough to feed a large village, he said. This was the moment he became a militant; I could see it in his eyes. He was so angry I thought he was going to swim out and turn the fishermen themselves into bycatch. Most of our ecoguides experience such an epiphany. When we hired Loic Mackaga, for instance, he was a convicted elephant poacher. His conversion came from working with Gil Domb, filming elephants and hippos on the beach. Seeing these animals through a long lens rather than the sights of a gun—mothers caring for their young, infants crying for milk and playing with their siblings—gave him a whole new appreciation of them. (Of course, Loic also recognized that the benefits of a steady job outweigh the stigma of being a convicted felon.)

About half an hour after my call to Jean, *Le Pêcheur I* turned offshore and stopped about two miles out. Better, but not good enough. I called Jean again; an hour later the trawler was gone.

Walking back down the beach, I thought about the owner of the *Pêcheurs,* among the most flagrant poachers off Loango. When I see his boats stealing fish day after day, I wonder if he believes he has the right to plunder the natural resources of a country that can ill afford to lose them. In the past year we've recorded dozens of instances of trawlers poaching fish inside the legal limit, mostly at inlets. These boats, though registered in Gabon and flying the Gabonese flag, are run almost exclusively by foreigners, predominantly Asians, Europeans, and West Africans. I also thought about all the other resource extractors I've met in central Africa over the years—loggers, hunters, miners—all taking, taking, taking.

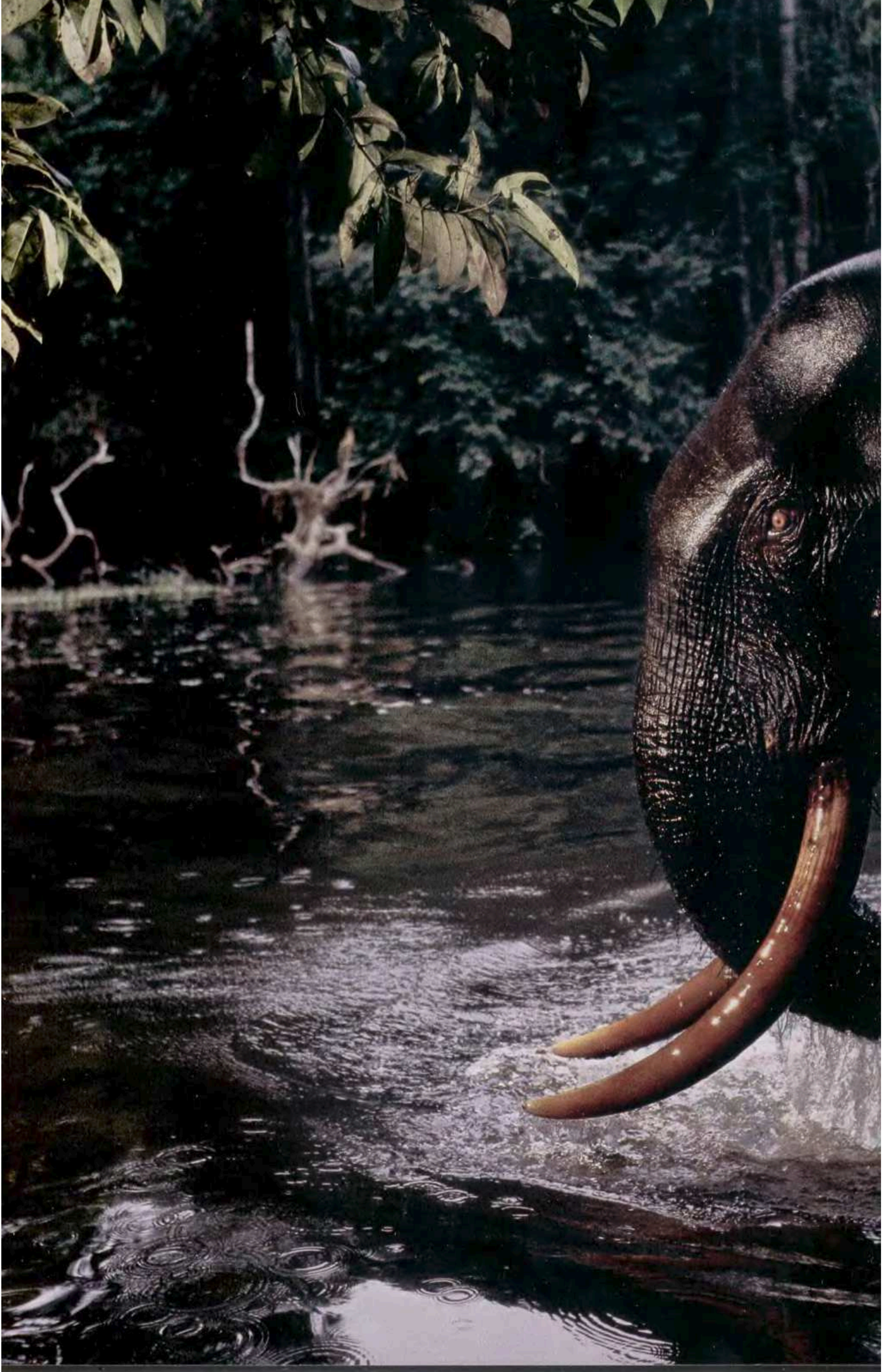
European nations have a long tradition of pillaging Africa, with no responsible limits. Now the European Union has a fishing deal, last renewed in 2001, with Gabon—one of 15 such agreements the EU has with African nations. At least another 11 are being negotiated. The treaty with Gabon includes provision for 64 tuna seiners and surface long-liners belonging to private companies (primarily French and Spanish), which can take 10,500 tons of tuna a year. Add to that another flotilla of European freezer trawlers, which have *(Continued on page 122)*

seeing the unseen

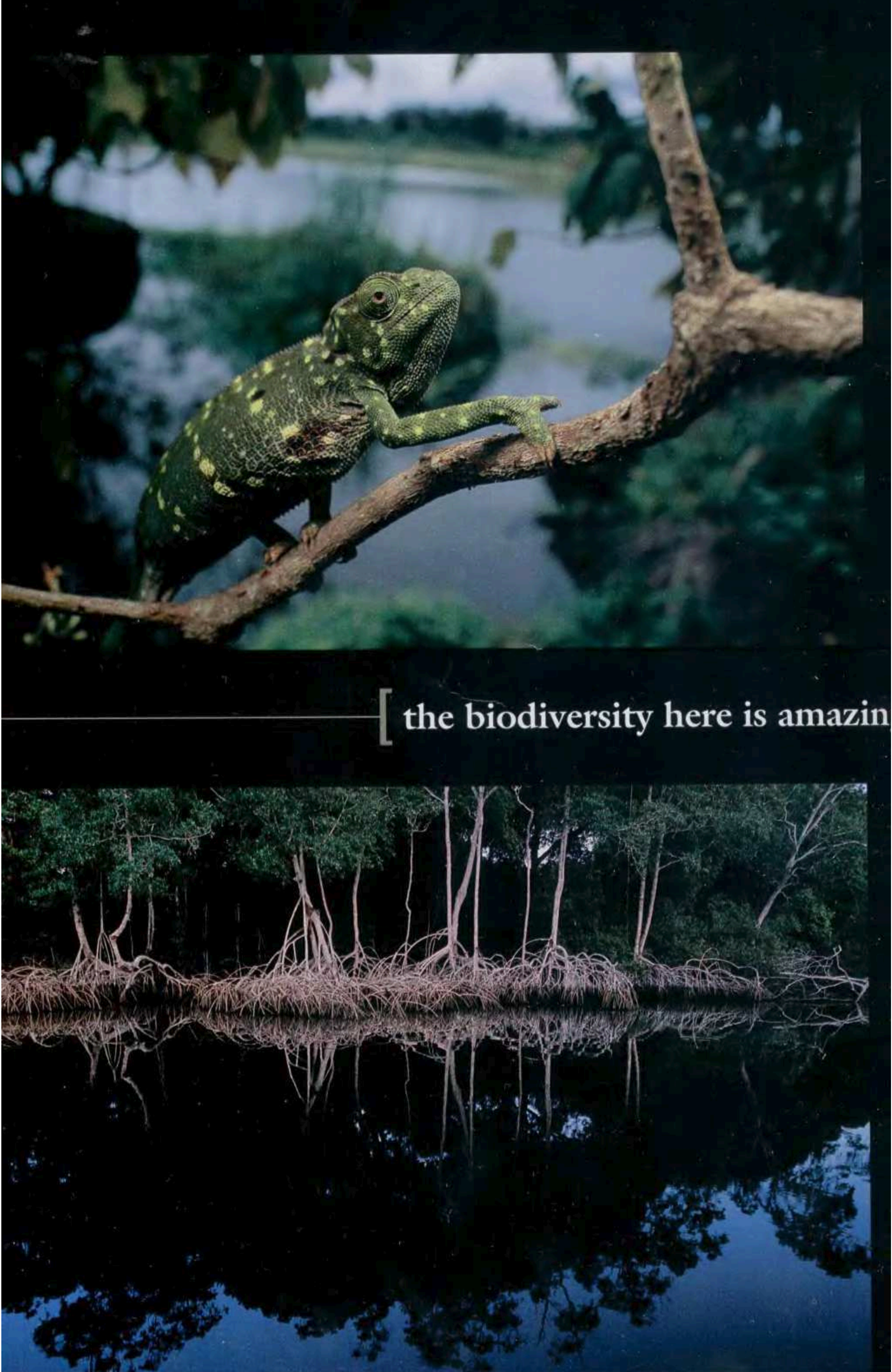
Most of the animals in Loango haven't had threatening encounters with humans, making them more curious than wary. To find the still unhabituated creatures, photographer Nick Nichols camped in the wilds for five months, adapting to the daily rhythms of his subjects.

RED-CAPPED MANGABEY *(CEROCEBUS TORQUATUS)*, NEAR "LIGHTHOUSE CAMP"

Flares of white cheeks and a blaze of red on its head gave away the lookout of a spying mangabey. "Animals like sunset on the beach just as we do, and I often waited to see who would come out then," Nichols says. "One day this young mangabey came up to the mangroves and watched me for five minutes. Then he was gone." Luck put Nichols in a canoe when days-old Nile crocodiles made their first swims in a tannin-stained creek (pages 102-103). Days of planning and the placement of an infrared camera trap produced a rare image of an adult male elephant in the deep forest (following pages), the shot triggered as the bull rose from swimming in a river.



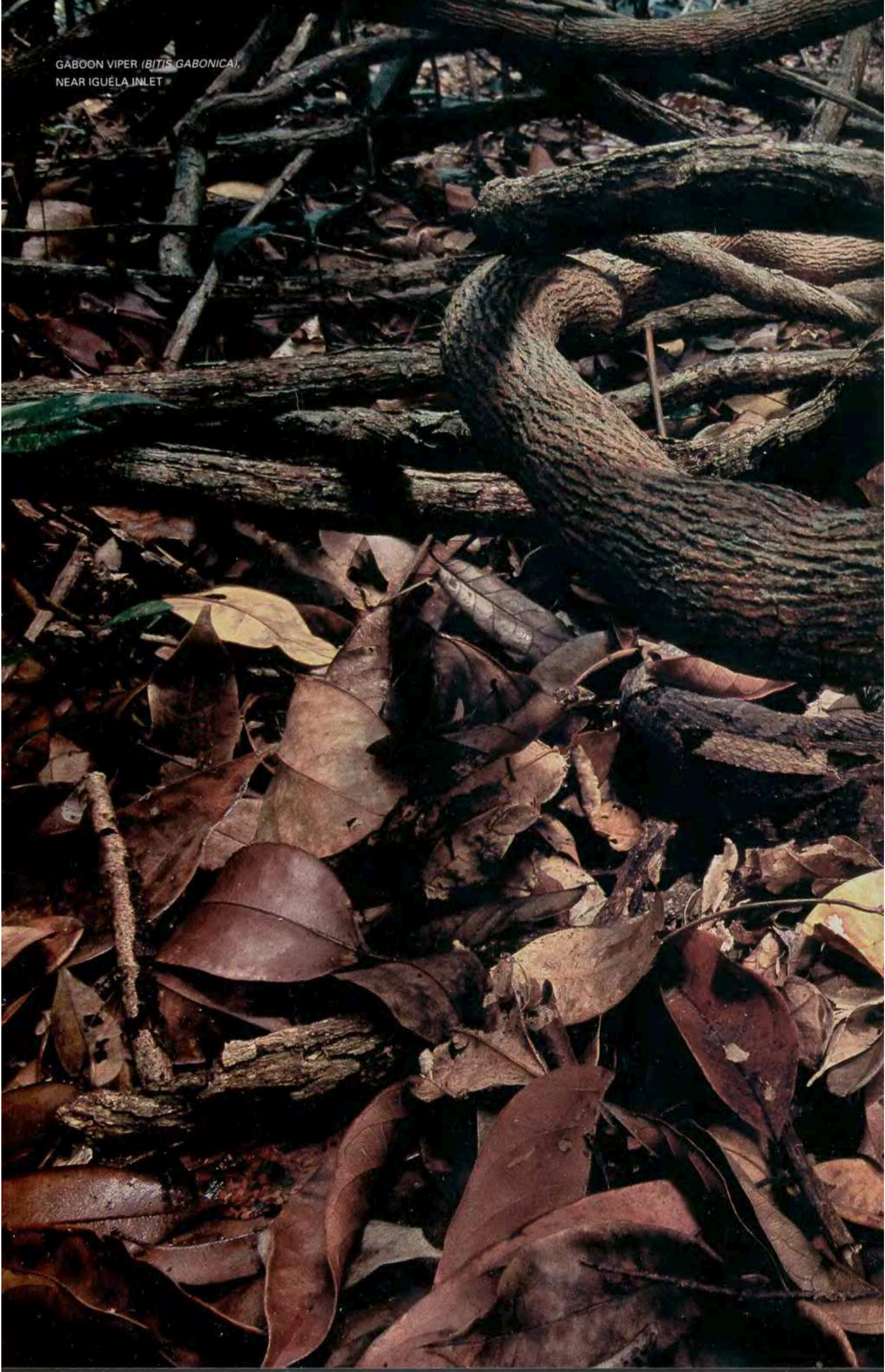
AFRICAN FOREST ELEPHANT
(LOXODONTA AFRICANA CYCLOTIS), ECHIRA RIVER


[the biodiversity here is amazin

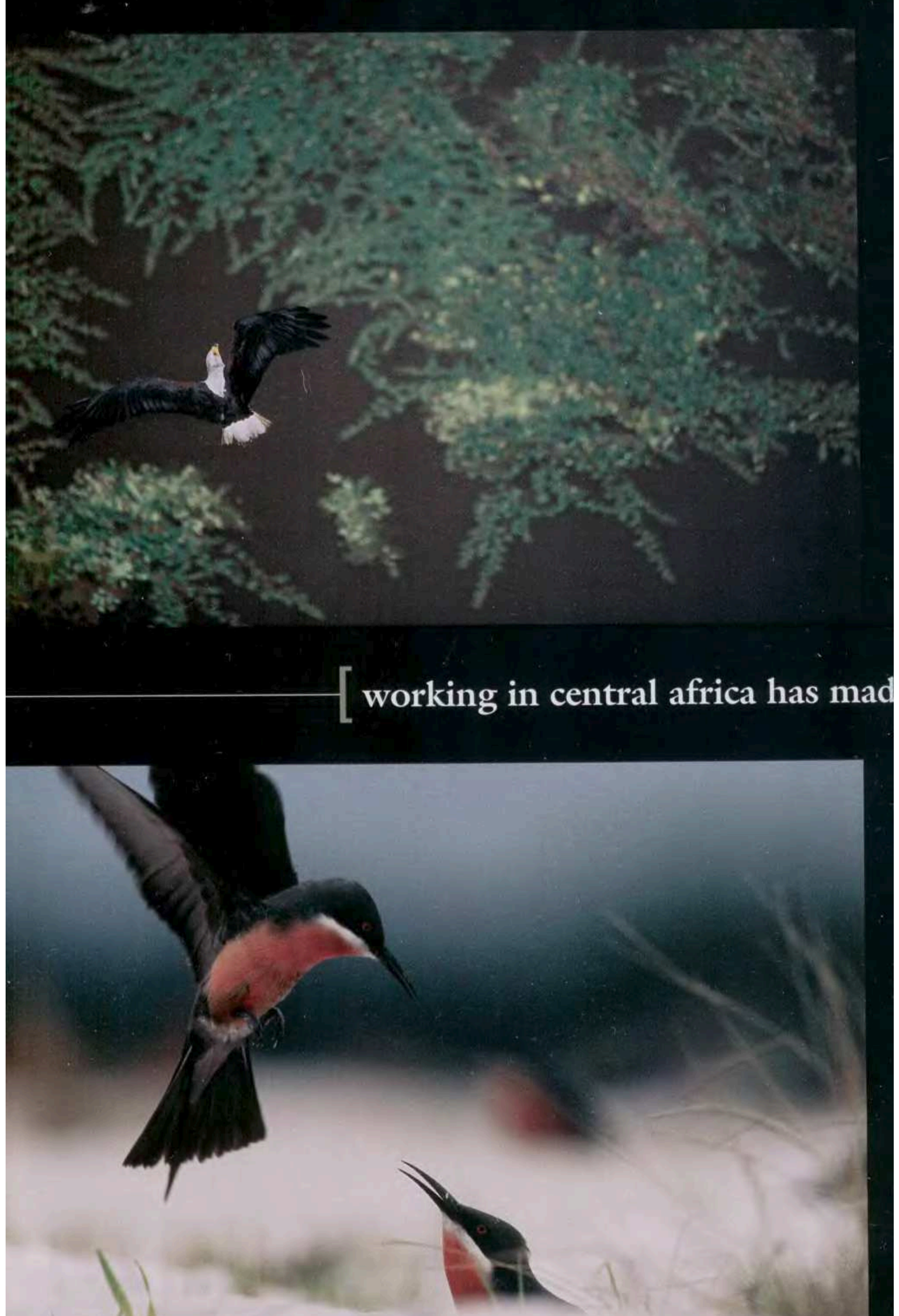
CLOCKWISE FROM TOP LEFT: FLAP-NECKED CHAMELEON *(CHAMAELEO DILEPIS)*, NIOUNGOU RIVER; CINNAMON-BELLIED REED FROG *(HYPEROLIUS CINNAMOMEOVENTRIS)*, AKAKA CAMP; ARMORED GROUND CRICKET (TETTIGONIIDAE), PETIT LOANGO CAMP; LAGOON, PETIT LOANGO CAMP

Game trails, splashes, and snapping branches reveal the presence of Loango's large mammals, but for bugs, amphibians, and lizards, it's often a flash of color or movement, a mating call, or chance that exposes them. The nightly din outside his tent inspired Nichols to find a frog at its post. A stealthy chameleon stopped mid-stride on a limb. Near a lagoon, where watermarks on mangrove roots inscribe a history of depth changes, an armored cricket heavy with eggs stood its ground. Nichols needed caution above all else to photograph a deadly Gaboon viper (following pages), its head nearly lost in the leaves.

his is life at its fullest] —Nick Nichols



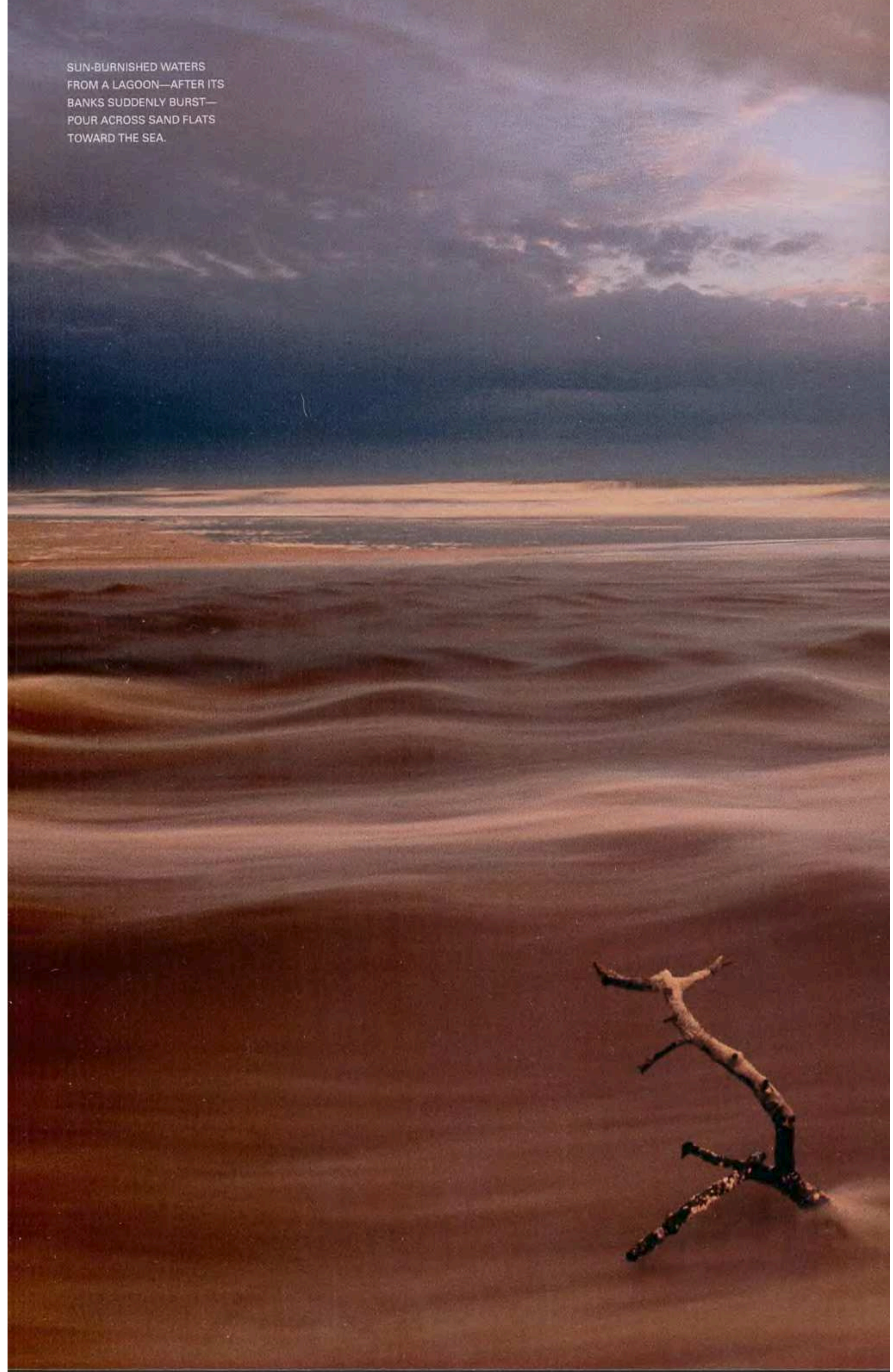
GABOON VIPER *(BITIS GABONICA)*,
NEAR IGUÉLA INLET


[working in central africa has mad

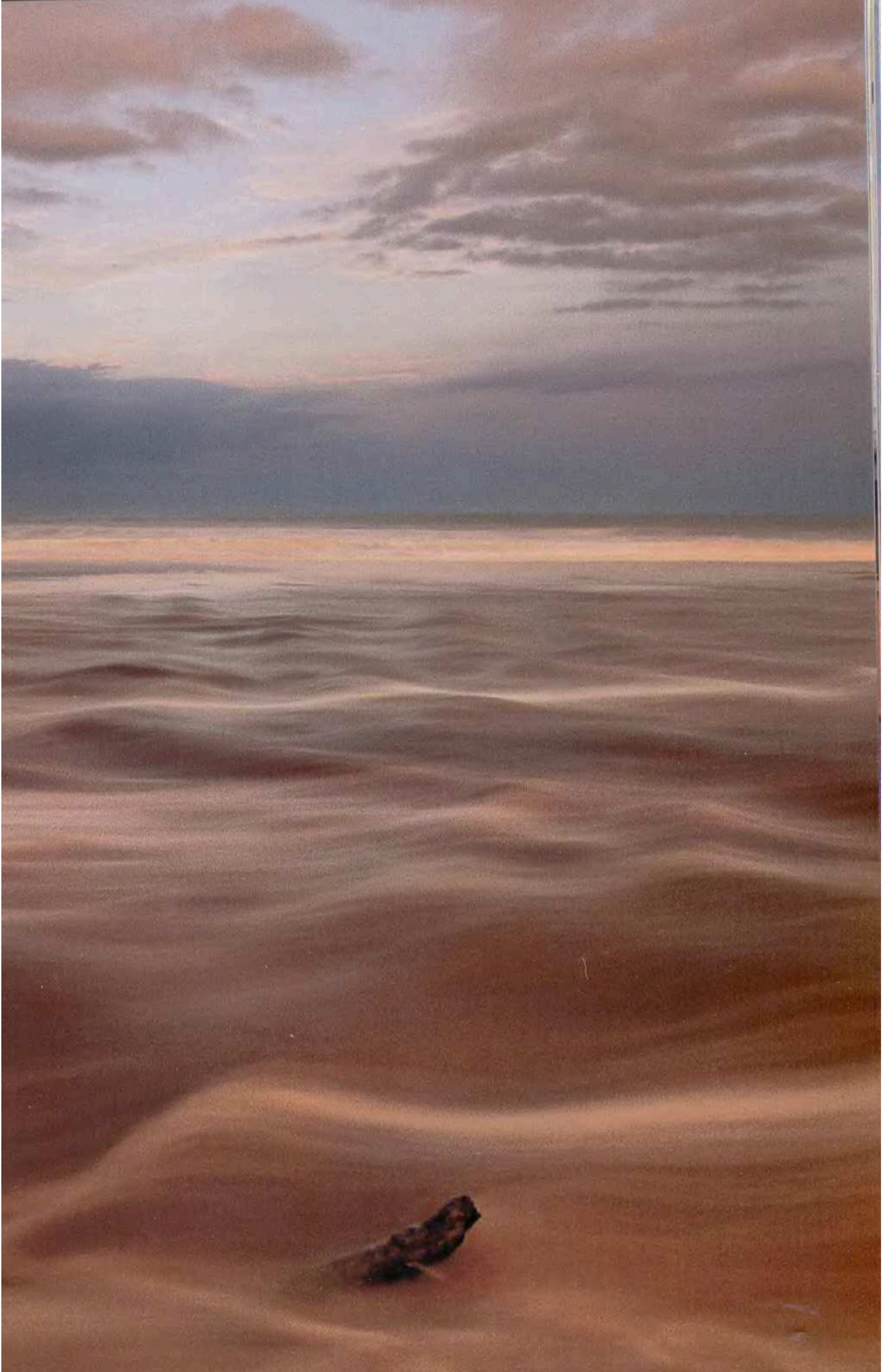
CLOCKWISE FROM TOP LEFT: AFRICAN FISH EAGLE *(HALIAETUS VOCIFER)*, SOUTH OF TASSI CAMP; AFRICAN FOREST ELEPHANT, ECHIRA RIVER; HUMPBACK WHALES *(MEGAPTERA NOVAEANGLIAE)*, ONE MILE OFFSHORE; ROSY BEE-EATERS *(MEROPS MALIMBICUS)*, TASSI CAMP

Within a modest radius of ten miles, Nichols found a dramatic sampling of creatures that pass through the Loango area. Canoeing on the Echira River, he surprised an elephant swimming in the murky waters. One day, flying a paraglider above a lagoon, Nichols gazed down on the impressive wingspan of a fish eagle. Mating rituals of rosy bee-eaters entranced him near the coast. The birds had gathered by the thousands, and with their nest digging "turned the savanna into a sandbox." And in a boat on the open ocean, Nichols rode the waves made by male humpback whales vying for a female.

e patient. everything is on nature's terms] —Nick Nichols



SUN-BURNISHED WATERS FROM A LAGOON—AFTER ITS BANKS SUDDENLY BURST—POUR ACROSS SAND FLATS TOWARD THE SEA.



(Continued from page 110) the rights to 14,400 tons of crustaceans and cephalopods, and you have a yearly grand total of 24,900 tons of seafood the EU can extract legally from Gabonese waters. For this haul Gabon receives a minimal payment. (In practice there are no limits: The fine print permits catches in excess of quotas at the same price.)

Critics say these agreements are market driven rather than based on scientific studies of sustainable fishing. They're designed only to supply European markets and to secure employment for EU fishery workers. And they fail to meet the objectives of international treaties under which EU members (and other First World nations) have committed to help develop, and reduce poverty in, poor countries like Gabon.

It makes me angry. The EU boats never put in at Gabonese ports, don't employ a single Gabonese (although Spain is now considering building a tuna-processing plant in Gabon), and never sell a single fish on the local market. No wonder Gabon, a country that eats less fish than it produces, still needs to import more than 10,000 tons of fish annually to meet its own domestic consumption. You'd think that in 2004, in a globalizing world with diminishing natural resources, wealthy nations like those in the EU would be more responsible. You'd think that by now prudent management and sustainable fishing would be more of a reality.

My hope is that the EU will soon become a strong force for fisheries in Gabon and that we'll succeed in getting a marine extension to Loango National Park. For now I was just very happy we'd cleared the coast of *Le Pêcheur I* —and that the incident had woken the sleeping giant in Basil Maganga. Gabon needs all the foot soldiers it can get.

[it seemed miraculous; turtle ne

turtle quest

Through the sea mist I was drawn by the refracted light of three headlamps. Then Clement Moukoula, the head of our sea turtle team, materialized. I couldn't make out exactly what he said over the crash of the high-tide breakers, but it was something like, "It's 21:07, and you, sir, are seven minutes late. Let's go!"

Every year from October to March, Clement is a nocturnal creature. His job is to count, observe, tag, and otherwise gather up all the information he can about the sea turtles that come ashore at night to lay their eggs. I'd joined him and two others, Serge "Feree" Ogoula and Jean-François Babicka, to survey a three-mile stretch along the northern limit of the park, just beyond the St. Catherine ecoguide camp. Our coastal patrols actually extend about eight miles up the beach in an effort not only to stop human predators from pilfering turtle eggs but also to allow mammals to return to Loango's shore. It seemed miraculous, but in the past six months turtle-nest pillaging had dropped to virtually zero (although turtle numbers overall were mysteriously down), and we now had elephants and sitatungas (large striped antelope) strolling the beach.

Mature female leatherbacks come ashore every three or four years but lay several clutches of eggs in that one season. This was the peak of the egg-laying season, and although I'd been out with the team on four consecutive nights, I still hadn't seen a turtle. I told Clement, who was poker-faced as usual, that if we didn't succeed tonight, he and the others would all be fired. That got a smile out of him.

We followed normal operating procedure: headlamps out, walking just above the tide line in a close search for fresh turtle tracks, a search facilitated by the glow from the flare of an enormous offshore oil platform. I go into a trance-like state on these walks, but Clement, who has done turtle counts all over Gabon for years, never stops making notes. He was obsessed with figuring out why turtle numbers were suddenly so low. He wondered if accelerated beach erosion had something to do with it. Or was it the new oil flare, or perhaps trawler fishing? I suggested global warming, the catchall excuse for collapsing ecosystems everywhere. Or could it be another frequently cited phenomenon, El Niño?

By rights this should have been a good night for leatherbacks, with a waning moon and the tide incoming, but by the time we reached the stick marking the three-mile limit of the study beach, we hadn't found a single one. So we had a bit of a snooze on the moist sand, then headed back down the beach. By now I'd gone from my trance to doing incantations to see a turtle.

When we were about half a mile from our starting point, an ominous black thing loomed ahead of us like an apparition in a horror movie. A leatherback! She was head-to-land about 20 feet above the tide line on a nice wide patch of beach. Clement instructed us to stand back while he checked how far along she was in the nesting process. "She's dug the egg chamber," he whispered. Just behind her was a perfectly cylindrical hole about six inches in diameter and a foot deep. "Sit quiet for a minute until she lays, then we can approach, no problem."

I heard the turtle make what sounded like a gasp, and Clement was up in a flash. Huddling up behind her, the low beam from his headlamp defining the chamber, we could see that she'd dropped several eggs. Clement looked distressed. "The hole isn't nearly deep enough," he said, pointing to the turtle's back right flipper, most of which was missing. The loss must have handicapped her ability to excavate, a task that calls for all her strength and dexterity.

I watched spellbound. This old girl was pushing hard, and she already looked exhausted. *Bloop*—more eggs fell. They were the size of billiard balls, round and white. Every time mom pushed, out came eggs, up to four at once, covered with a gooey mucus. As the hole filled, we counted: 30, 50, 80, and, finally, 84 eggs. Clement was right—the egg mass overflowed the hole.

As soon as she'd finished, the turtle team hopped into action to record her vital statistics. Her carapace was measured: 143 centimeters (56 inches) long and 105 centimeters (41 inches) wide. Clement estimated her weight at 300 kilograms (660 pounds), suggesting she was no more than 20 years old. (Leatherbacks, which range widely in the open ocean, feeding on jellyfish, their staple food, can reach more than a ton and live 50 years.) Loading a stainless steel ID tag into his pliers, Clement grabbed the skin between the carapace and the damaged flipper and squeezed hard. She didn't even flinch. The turtle was duly christened ASF2637, according to the tag number. Because tags sometimes fall off, Feree then applied a second one to the opposite flipper. Seemingly oblivious to all this activity, the turtle started covering the eggs by alternately scooping sand over the pile with one hind flipper and tamping it down with the top side of the other.

I glanced at Clement questioningly. He nodded. I touched her flipper, and my heart stopped when she almost grabbed my wrist with it—that flipper seemed prehensile! I'd expected the limb to be hard and scaly, but it was fleshy and supple as a seal's. The baby-soft skin was slate gray, with what looked like sponged-on blotches of white latex. Diligently, she continued sweeping and tamping, working with such eerie dexterity that she struck me not as a turtle at all but as a person dressed up in turtle costume. Any second now she would start talking: "Hey Mike, can you push that egg into the hole for me?"

I thought about all the things ASF2637 must have seen in her decades at sea: giant passenger ships, trawler nets, sharks, manta rays, humpback whales, oil spills, and tons of garbage. Where had she been, and what had injured her flipper?

She finished tamping, but two eggs remained exposed. Clement grabbed them and removed them far from the nest, lest they alert predators like civets, ghost crabs, or monitor lizards to the nest's location. The covered eggs would incubate, unattended, for 60 to 70 days. The hatchlings would break through the nest chamber at night and head for the water. Crabs would be lurking on the beach, and for the tiny turtles that made it to the sea, jacks and mackerel, not to mention trawler nets, would be waiting.

Now the turtle's front flippers—paddles nearly as long as her body—went back into action, throwing bucketloads of concealing sand all over the egg chamber and surrounding area. With each throw she pushed slightly forward and to the side, cutting a deep swath in the sand. After a bout of scooping she rested her head, closed her teary eyes, and gasped for more air, her carapace glistening in the moonlight. As I slid my fingers along it, it felt like the curve of a finely polished marble sculpture. Indifferent to our presence, the turtle was following an innate program encoded millions of years ago. If anything, I felt she somehow knew we were on her side.

After 45 minutes of huffing and puffing and chucking sand, she was 15 feet from the nest and 40 or so from the surf. A ghost crab would be hard pressed to find turtle eggs around here: The sand was so churned up, it looked as if someone had Rototilled the beach. Clement and crew

illaging had dropped to virtually zero]

measured the exact distance between the nest, the high-tide line, and the surf and drew a map of the tracks to and from the nest site. A GPS position was taken, so they'd be able to visit the nest in a few months to see if the eggs had hatched.

Her work done, ASF2637 lumbered toward the water, as we silently urged her on. At last she made it to the pounding surf, and—now you see her, now you don't—disappeared home into what seemed a lonely and foreboding sea.

trash dudes

The sun was already showing signs of being evil as the trash crew readied for action. An early riser, Serge Nkala Y'Eteno, the trash chief, was way down the beach at the work site, having some quiet time to himself. The other five were busy making a thick slurry of instant mashed potatoes mixed with Nestlés cocoa powder and heaps of sugar. I opted for coffee and a bowl of oats.

By seven o'clock we were all walking toward the site about 15 miles south of Iguéla Inlet, where the cleanup operation had begun about a month before. Roughly 30 more miles to go (five months of work) before all of Loango's waterfront is junk free. Today's section was in a strong tidal zone, and the shape of the beach made for a good (or rather, bad) concentration of trash. I was hanging out with Serge Gnogomie, whom I call "Nogomi" to avoid confusion with Serge Y'Eteno. Nogomi described the work. Every night, he said, Chief Serge assigns each team member a 100-meter stretch of shoreline from the water's edge to the high beach.

Next day the team scours 500 meters of beach, making trash piles at 5-meter intervals—a hundred separate heaps of garbage to be cataloged and disposed of. The pay is nominal, about six dollars a day plus all the rice, corned beef, and breakfast mush they can eat.

It wasn't long before we came across an amorphous blob of plastic the size of a large beach ball. It looked like a meteorite from space, black and hard. Turning it over, I noted a protruding label that included the words "well number." That told me exactly what our object was: a large bundle of the bags used by oil companies to hold mud or rock samples. Someone should have incinerated it but had only done half the job, dumping the blackened remains into the ocean. We find a lot of oil industry trash on Loango's beaches.

I walked down the beach to join Chief Serge and the others. The accumulated trash covered the sand as far as the eye could see. This stuff has been washing ashore for decades, and cleaning it up is just one piece of the conservation puzzle we're attempting to solve with Operation Loango. You can't expect to have vibrant ecotourism here with dirty beaches, can you?

The most widespread eyesore was a relatively recent product: the plastic water bottle. In just the past decade billions of these things have invaded the Earth. Most countries now produce bottled water, and hundreds of millions of people drink only that. Seeing all the bottles on this remote beach, I thought: This can't go on. The world just can't afford to burn this much energy to make bottles from fossil carbon that we fill with spring water, ship halfway round the world, sell for more than the price of gasoline, and then chuck out. It's *nuts.*

Chief Serge was busy banging the top out of a 55-gallon steel drum. This one had had some kind of corrosive material in it, a chemical soup long since leaked from the rusty shell into the ocean. We dispose of these by removing the top and bottom so they don't float, then throwing the hulk into the sea. The salt water does the rest. To document items like this, every 50 meters Serge takes two GPS readings to demarcate an area where the density of trash will be calculated. Then he sits down at each pile and makes a note of every intact object.

What's to be done with mountains of trash turned into mountains of data? We'll use the statistics as weapons of mass awareness to convince oil companies, cities, and other offenders we identify that they're part of the problem and need to become part of the solution. We'll show the mayor of Pointe-Noire, the main port of neighboring Congo, all the Congolese trash we've found. We'll talk to oil company executives, encouraging them to be more careful about incinerating waste. We'll urge the general public to demand locally produced drinking water. Who knows, we might even persuade water-bottling companies to use more eco-friendly containers.

It was now about 10:30 in the morning.

[seeing all the bottles on this remo

Sweltering. Already, the hundred trash piles had been amassed, and Chief Serge was sitting in front of pile three. Dimitri Mouvoungou had begun marking off tomorrow's beach assignment, and Nogomi had gone back to camp to fetch drinking water fresh out of the local creek. I watched Serge as he meticulously cataloged the pile, which included a 1.5-liter plastic soda bottle, three nicely stacked foam cups, a fishing float made from three motor-oil containers bundled in a piece of trawling net, five intact flip-flops (three right and two left), an unopened Sprite can labeled in a language he (and I) didn't understand but which he copied down faithfully, a 500-gram Olma margarine tub, the top to a can of Quaker Oats, a little white doll's shoe, a dozen 1.5-liter water bottles, a syringe, a Johnnie Walker Red Label bottle, a plastic shopping bag. . . .

The sun was burning me up, and I decided to take a dip in the ocean. When I caught up with Serge again, he was at pile ten, assiduous as ever with his logbook but now getting help from Gisele Mabiala, the only female in the crew. Around 11:30 the youngsters Karl Remanda and Youri Rognoundou passed by, doing a sweep of the lower beach and making sure they hadn't missed a single item in their 200 meters. These two always work together ("We do a more thorough job that way"), and for them to be satisfied, the eye has to be able to scan a completed section of beach and not be distracted by a man-made *anything.*

Tagging along with Karl and Youri, I asked what was the most striking thing they'd found. A few weeks ago, they said, they'd come across a brick-shaped object wrapped in many layers of what looked like commercial Scotch tape. Peeling it off, layer by layer, they finally came to a thick white paste that "heated" and discolored the tips of their fingers when they touched it. It had a chemical smell, like soap. I wondered: Was it heroin or cocaine? This wasn't the first time the crew had found such objects. I joked with Karl and Youri that if I were they, I'd be looking out for the valise containing the payment for those little packages—we could use it to start up another operation. They had no idea what I was talking about.

each, i thought: this can't go on]

I looked down the beach, then up the shore, past a buffalo in the distance, as far as I could see, and the magnitude of what these six people were accomplishing with just their bare hands struck me. I ran through some quick calculations. With a thousand such volunteers we could clean the beach all the way to Cape Town, 2,500 miles to the south, in 48 days, for about $385,000.

By the afternoon the crew (except for Chief Serge, who was still hostage to his data collection) had begun digging incineration holes at roughly ten-meter intervals. At 1:22 the first disposal fire was lit. The mix of a stiff onshore breeze and the flammable trash made for a serious blaze, which soon sounded like a big pot of popcorn, crackling and exploding and releasing little whistles of gas. I watched as the Olma margarine tub slipped into the flames and a pressurized soda bottle jumped as if in a death throe. Black smoke billowed into the air, and soon all that was left was a cauldron of burning metal and plastic. In these infernos the volume of the trash is reduced by more than 99 percent; glass bottles crack and melt, aluminum fishing floats burn, even entire TVs are reduced to ash, silicon, and copper.

A second hole was now ablaze, primed by lumps of tar from the frequent oil slicks that wash ashore. Burning the trash this way, which causes its own pollution, seems drastic, but our fires are probably equivalent to about two seconds' worth of the gigantic gas flares that burn continuously a few miles off Gabon's coast.

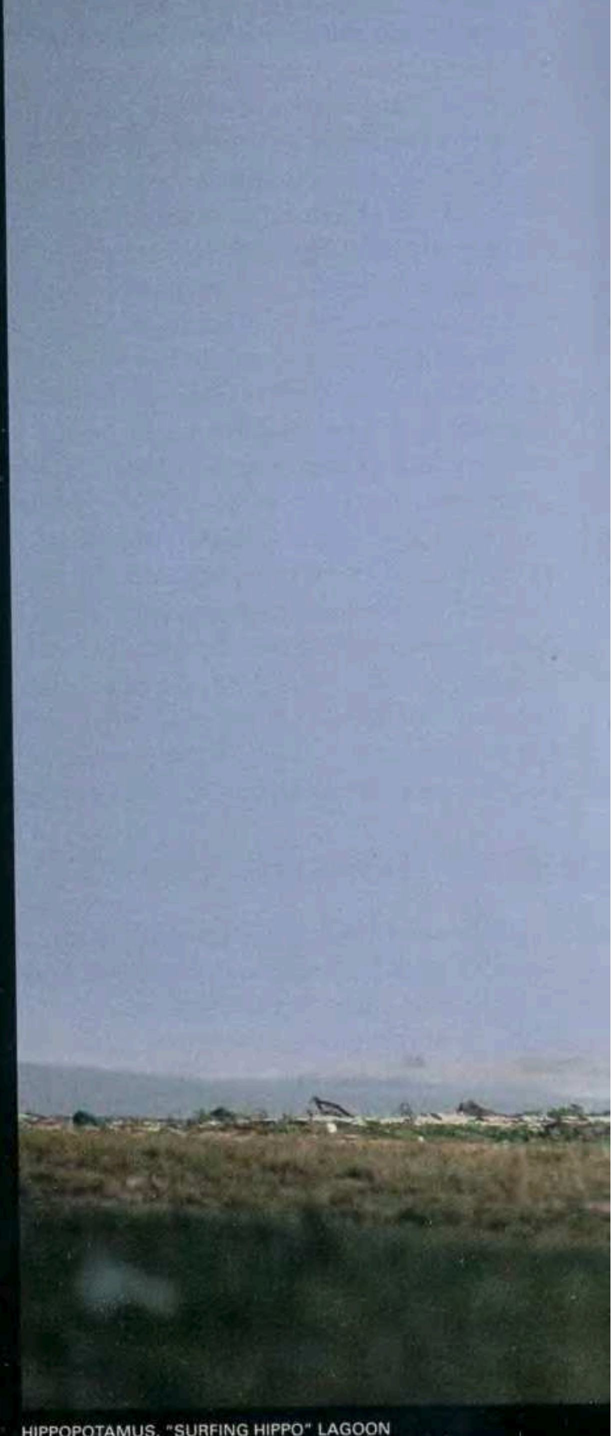
By 6 p.m. Chief Serge, his recordkeeping finished, was helping load stuff into the last burn hole. The sun was setting behind us as we strolled back to the camp for a hearty meal of corned beef and luncheon meat on oily rice. We sat around the campfire, recounting the catch of the day: 535 plastic bottles, 560 intact flip-flops, a 55-gallon drum, 4 refrigerators, 4 hard hats, a 20-liter pressurized freon bottle, and 2,240 other sundry bits and pieces.

About 50,000 water bottles from now, we should be done cleaning Loango National Park. Who knows? Maybe we'll take Operation Loango all the way to Cape Town.

RIDE THE WAVES with hippos in Loango National Park and experience Mike Fay's central African trek in a multimedia special narrated by him and Nick Nichols. Sound off in our Forum on the challenges of Third World development, get the full scoop on ecotourism in Loango, and download free desktop wallpaper at **nationalgeographic.com/magazine/0408.**

[if the park is done right, visitors should fee

After a long day's night of feeding on coastal grasses, a sated hippopotamus tromps back to its home lagoon to sleep. Known to Fay and Nichols as one of the "surfing hippos," this solitary male swims out near the breakers, the salt water keeping him buoyant as he bodysurfs to and from feeding grounds. Such sights make Loango one of the world's most arresting wildernesses. The park is dealing with birthing pains—from poaching, lack of trained staff, illegal fishing, and tons of washed-up trash on the continent's finest stretch of beach. But the park's advocates, Fay and Nichols, are optimistic. With no permanent structures allowed on the shoreline, visitors will be encouraged to act as unobtrusively as the wildlife, packing up camps and disappearing, the coast left to nature until the next lucky witnesses arrive. ▯



HIPPOPOTAMUS, "SURFING HIPPO" LAGOON

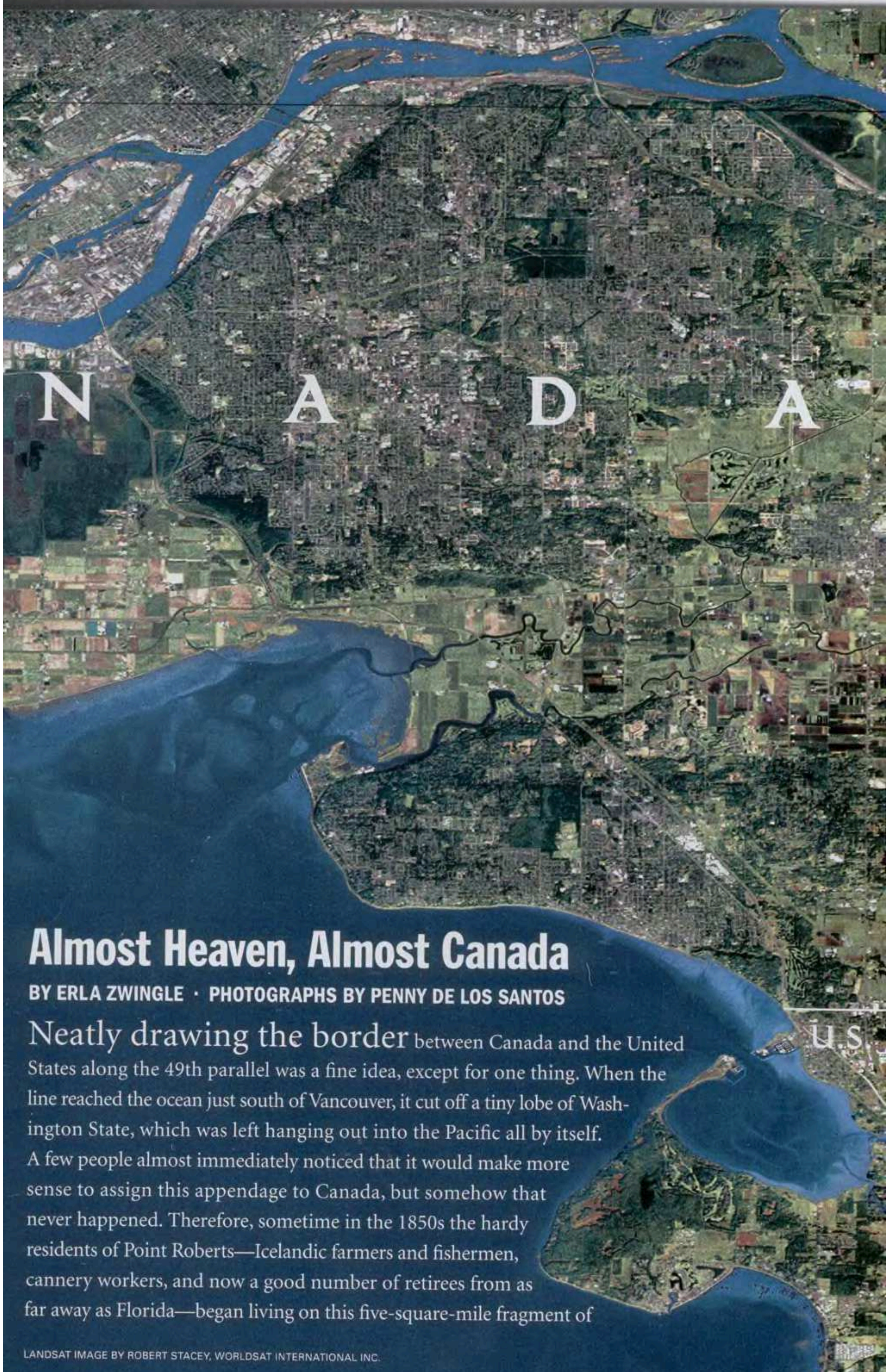
ke the first people to see this place]

—Nick Nichols

C A

U.S.

98281



Almost Heaven, Almost Canada

BY ERLA ZWINGLE · PHOTOGRAPHS BY PENNY DE LOS SANTOS

Neatly drawing the border between Canada and the United States along the 49th parallel was a fine idea, except for one thing. When the line reached the ocean just south of Vancouver, it cut off a tiny lobe of Washington State, which was left hanging out into the Pacific all by itself. A few people almost immediately noticed that it would make more sense to assign this appendage to Canada, but somehow that never happened. Therefore, sometime in the 1850s the hardy residents of Point Roberts—Icelandic farmers and fishermen, cannery workers, and now a good number of retirees from as far away as Florida—began living on this five-square-mile fragment of

LANDSAT IMAGE BY ROBERT STACEY, WORLDSAT INTERNATIONAL INC.

the peninsula as if it were an island colony of some distant mother country. The scenery is gorgeous, and thanks to the guards manning the checkpoint on the border, life is ridiculously peaceful. But it is also riddled with inconvenience.

"This is a wonderful piece of heaven," said cheery, endlessly energetic Terrie LaPorte, owner of the Maple Meadow Bed & Breakfast, "but you can't buy a bra here. You can't buy shoes here. There's no dentist."

If Point Roberts had a national anthem, this would be it: Ten verses outlining the hassles, drawbacks, and handicaps—some of them rather serious, such as the lack of a pharmacy or doctor. Some are merely tedious, such as the need to drive around 45 minutes to leapfrog across the border twice, once at the Point Roberts checkpoint to cross from the U.S. into Canada and then at the Blaine checkpoint to get back to the U.S., simply to buy your license plate, fill a prescription, or go to school past the third grade. But after each stanza everyone would join the rousing chorus, "We're here because we want to be here."

The adoration that the 1,300 year-round residents lavish on this piece of land is matched only by the foibles and feuds that flourish among them. If you sit on the porch at Maple Meadow in the summer evening with Terrie LaPorte and her husband, Keith, you'll hear the main points as expressed by a cross section of their friends who drop by. As the breeze rustles the stately trees and twilight falls, they drink their wine and marvel yet again at their good fortune, the natural beauty, the pods of killer whales frolicking off Lighthouse Point, the peace and tranquillity.

Those gatherings also usually cover the flip side. This being a small town, everyone knows everyone, or close enough. "I took the truck to the shop today," Terrie's husband was telling her. The shop is in Canada, of course. "When I got back, this kid asked me, 'How's your truck?'" Things like this make Keith burst into wild laughter. "That's Point Roberts for you! I don't even know the kid, and he asks me, 'How's your truck?'"

But this is typical of small towns everywhere. Point Roberts's twist on the tie between closeness and comfort is that so many people move here as if to a sort of bucolic fortress. Almost everyone's first compliment to the "Point" is safety. "It's the greatest gated community in the U.S.," they like to say. In exchange for this security they struggle to adapt to inconveniences

Flexing a temporary maple leaf tattoo, Canadian Janelle Neill, ten (left), hits a Point Roberts beach, a favorite family retreat despite 55°F summer surf. "She's fearless," says her mom, Rhonda, who's U.S.-born. "She's got her suit, she's in the water." Knowing no borders, whales often bob past the shore of Lighthouse Marine Park, where fans line up for a glimpse.

98281

POPULATION: 1,300
SUMMER PEAK: 5,000
TRAFFIC LIGHTS: One (four-way flasher)
BUSIEST HOLIDAYS: Canada and Independence Days

that go beyond the picturesque. The nearest hospital is in Canada, so if you have a heart attack, it's better for you to be Canadian. If you're a U.S. citizen, you need to hope either that your insurance will cover you in Canada, or that the EMTs can get you on a helicopter to St. Joseph Hospital in Bellingham, an hour's drive from Point Roberts. If you're one of the few local merchants, the exchange rate with the Canadian dollar looms over your daily well-being, since shoppers on either side of the border tend to go where the prices are lower. And even though 60 percent of the year-round residents are U.S. citizens, Canadians own nearly half of the property, most of it for summer homes. This means a large number of the property owners, being foreigners, can't vote on any municipal issues, which does sort of skew the whole democracy thing and strain those neighborly encounters.

Still, people like it this way. "Come to Point Roberts, step 20 years back in time," Terrie LaPorte told me blithely. "We're behind and we're glad." Just bring up the subject of installing a municipal sewer system. This issue is one of the most controversial because it could attract development. "There are two primary groups," explained Henry Rosenthal, a soft-spoken California retiree. "Those who want to stay in the 19th century and want no growth. And those who want some logical and sustainable growth."

As for diversion, there is a thousand-boat marina and a golf course, but bingo at the fire hall is about as wild as the entertainment gets, if you don't count karaoke night at Kiniski's Reef Tavern. Jobs are scarce, and there isn't even any downtown, yet when residents look down that long, pine-scented road toward the border checkpoint and see the Canadian strip-mall hell that is Tsawwassen just beyond it, they shudder.

Canadian cash is as welcome as U.S. money in this small border town, where many businesses use special dual-currency registers (above). Bingo at the fire hall (below) still draws a heavily Canadian crowd, since Point Roberts was, until recently, the only legal gambling around. Winners claim their jackpots—up to $5,000—in Canadian bills.

If that's development, they'll be at the barricades to stop it.

You can experience the benefits of this attitude at places like Lighthouse Marine Park, where everyone comes to wander the stony beach and watch for whales at play. Ben VanBuskirk, the blond, bearlike park manager, finds the sweeping vistas across the Strait of Georgia toward the mist-draped bulk of Vancouver Island balm to the soul. Still, he has been here 15 years and was beginning to feel a slight need to expand his activities. So in 1999 he and a college friend decided to invent a two-player board game that reflected something of Taoist philosophy. The result was a deceptively simple game they dubbed Dao. When I visited him, his cluttered basement was awash in boxes, boards, and pieces as he labored to keep up with the orders. "I sold my first game on December 10, 1999, and by December 13 I'd sold 130 of them," he recalled. "I'd come home and find notes stuffed under my door. There was a steady stream of traffic—people must have thought I was running a crack house."

Dao won the Mensa Select games award in 2001 and has since gone big time. But it remains the perfect Point Roberts game. Everybody in the town plays it, and after the first try I could see why.

"We said, Let's create a game that rewards balance," Ben explained as he set up a sample game for me to try. "It has the simplicity of tic-tac-toe and the strategy of chess. You don't remove any pieces, and if I trap my opponent in the corner, I lose." Best of all, long-term strategy is impossible; the game's shifting permutations give you hope of winning till virtually the last move. It's all very Point Roberts. □

Eyeing the sea, Canadian fishery officer Jonathan Taylor (left) looks for commercial fishing boats illegally entering U.S. waters. The marine boundary can be tricky to spot around Point Roberts, where border checkpoints and last-chance turnoffs (below) are part of the everyday landscape.

WEBSITE EXCLUSIVE Find more 98281 images, field notes, and resources at **nationalgeographic.com/magazine/0408.** Tell us why we should cover YOUR FAVORITE ZIP CODE at **nationalgeographic.com/magazine/zipcode/0408.**

Final Edit

JERSEY SHORE

Photo Gets Bum Rap

This is a typical Saturday in New Jersey. Really.

"There is such a wackiness on the Jersey Shore. People let loose," says photographer Amy Toensing, who shot this picture of a group of friends strolling into the Atlantic at Gunnison Beach, the shore's only nude venue. It may have been Toensing's first time working a clothing-optional scene, but it wasn't a first for these regulars. As many as 10,000 locals and out-of-state travelers visit this beach on a nice summer weekend.

"I admired this group of friends," says picture editor Susan Welchman. "They looked like they were having such a good time." Other editors agreed. Alas, Editor in Chief Bill Allen butted in to point out that we already had a surfeit of skin in another story in the issue ("Why Are We So Fat?" page 46). "You can use the picture," he said, "for Final Edit." So all's well that ends well.

WEBSITE EXCLUSIVE

Cut it or keep it? Find out more about what tipped the balance for this photograph at **nationalgeographic.com/magazine/0408.**

GABON COAST

Life With Father

Taking his wife and sons to Africa was the "best thing we've done as a family"

After 15 years of shooting stories in Africa without them, photographer **Nick Nichols** brought his wife, Reba, and sons Ian and Eli along for a six-month campout on Gabon's coast. Ian, 22, took a year off from college to accompany the family and work as a photographer on a whale research project (below). Eli, 14, still had to go to school, but his mom was his teacher, and his classroom was the beach (bottom). Nick and Reba even had some quality time, until he got a stinging rebuke. While shooting wildflowers together, he bumped a beehive and suffered swelling for days (right)—and teasing even now. Nick insists he yelled to her, "Run!" But Reba says Nick was the one who ran. "He just left me standing there."

NGS PHOTOGRAPHER MICHAEL NICHOLS (ABOVE, BOTH); NATHAN WILLIAMSON

GNMENT

COVERING THE WORLD

SUSAN BURNS CHONG (ABOVE); ALICE RUBEN

JERSEY SHORE

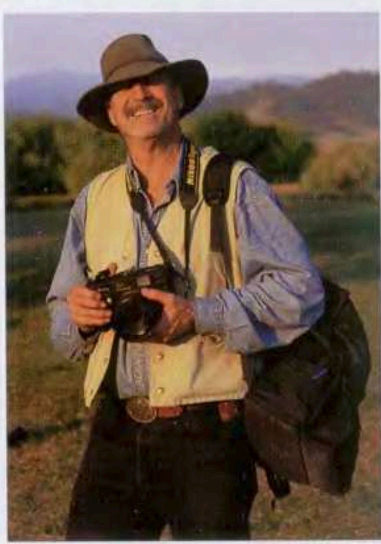
Baby, We Were Born to Sun

Seasides seem to be a theme for **Amy Toensing** (above), who has also shot stories on Puerto Rico and Monhegan Island, Maine. Amy often follows her subjects right into the ocean. "I always take a little waterproof point-and-shoot camera," she says. "There's something innately fun about people in the water."

A 1940s photograph of author **Cathy Newman**'s Jersey-girl mother, Edith, at left, with sisters Alice and Eva in Belmar, reminded Cathy of her own summers "down the shore." "I was from Miami," she says. "I thought New Jersey was exotic!"

WORLDWIDE

Whenever **David Alan Harvey** (below) told Australians he was photographing a story on Banjo Paterson, "their faces lit up," he says. "Banjo's like a Will Rogers or a Mark Twain there." Dave read Paterson's work before starting the shoot, but found that to get a refresher, all he had to do was ask. "Lots of Australians can give you Banjo poems off the top of their heads," he says.



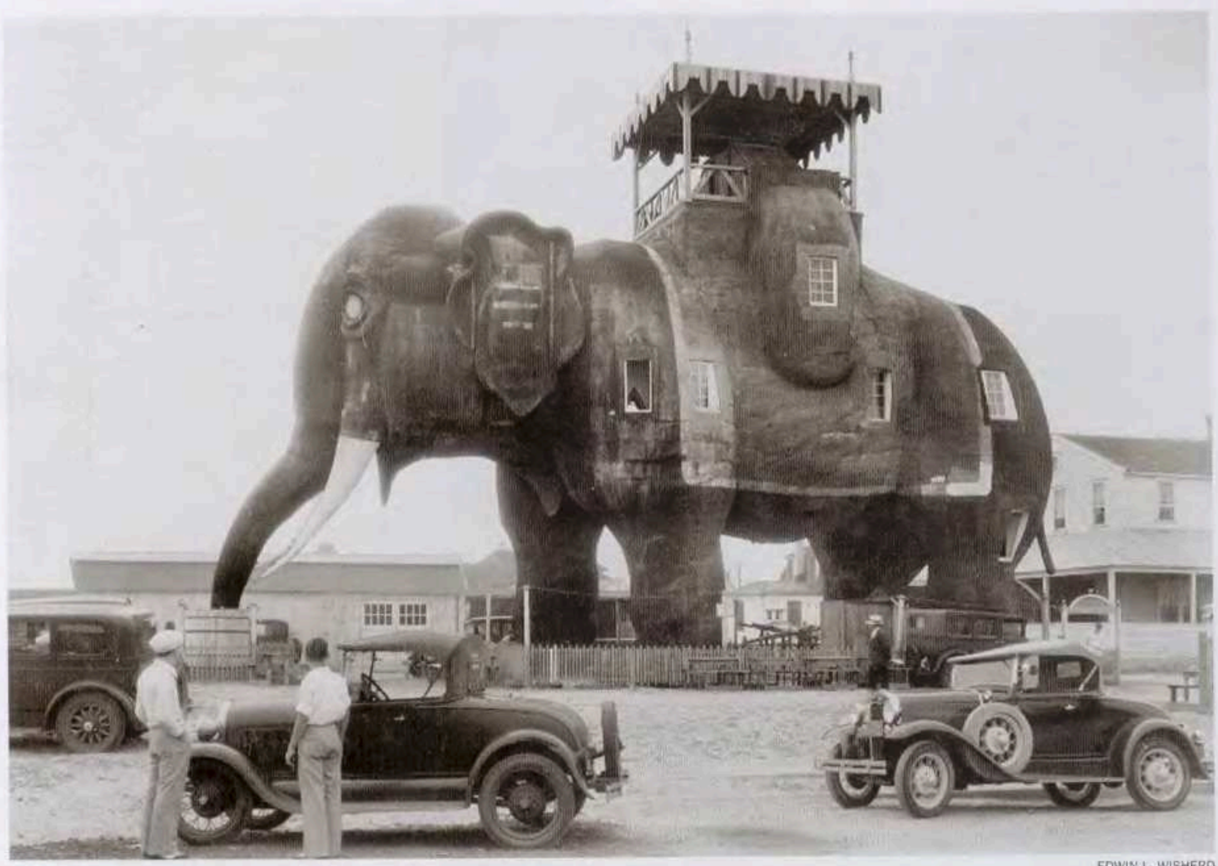
KERRY TRAPNELL

Photographing squid had **Brian Skerry** squirming. But the squid were the least of his worries. Shooting in Venezuela, he contracted dysentery, then suffered dehydration, then a kidney stone. On his trip home the stone caused such pain that "I was making deals with God," he says. But his luck would only get worse. Four cases containing $50,000 worth of camera equipment were stolen at the Miami airport.

Back home in Massachusetts, Brian learned that treatment for the kidney stone involved placement of an 18-inch stent in his urinary tract. The tube stayed in for a two-week shoot in Mexico, during which he was grabbed by a particularly peevish Humboldt squid. The upside to the squid assault? "It made me forget about my stent," Brian says.

WEBSITE EXCLUSIVE Find more stories from our authors and photographers, including their best, worst, and quirkiest experiences, at **nationalgeographic.com/magazine/0408.**

Flashback



EDWIN L. WISHERD

JERSEY SHORE

We Love Lucy

Six stories high, with portholes for eyes and a spiral staircase in each hind leg, the elephant-shaped building known as Lucy has towered over Margate City, New Jersey, since 1881. A real estate developer built Lucy to lure customers by offering them pachyderm-top views of land for sale. Since then the structure, modeled after an Asian elephant, has served as a home, tavern, and—as seen here in 1932—a privately owned tourist curiosity.

In 1970 Lucy was relocated to a nearby park, and a long restoration began. Today the elephant—the interior painted its original "gastric pink"—is open for tours. "You know," says architect Margaret Westfield, who helped make the old elephant look new, "Lucy is actually a male." We know: Female Asian elephants don't have the big tusks.

—*Margaret G. Zackowitz*

WEBSITE EXCLUSIVE

You can access the Flashback photo archives and send electronic greeting cards at **nationalgeographic.com/magazine/0408.**

NATIONAL GEOGRAPHIC (ISSN 0027-9358) IS PUBLISHED MONTHLY BY THE NATIONAL GEOGRAPHIC SOCIETY, 1145 17TH ST. NW, WASHINGTON, DC 20036-4688. $34.00 A YEAR FOR U.S. DELIVERY, $6.00 PER SINGLE COPY (INCLUDES POSTAGE AND HANDLING). PERIODICALS POSTAGE PAID AT WASHINGTON, DC, AND AT ADDITIONAL MAILING OFFICES. POSTMASTER: SEND ADDRESS CHANGES TO NATIONAL GEOGRAPHIC, PO BOX 63002, TAMPA, FL 33663-3002. IN CANADA, AGREEMENT NUMBER 40063649, RETURN UNDELIVERABLE CANADIAN ADDRESSES TO NATIONAL GEOGRAPHIC, PO BOX 4412 STN. A, TORONTO, ONTARIO M5W 3W2.